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MARTINS eat bees, says W. Woodley, in *British Bee Journal*.

UNITING BEES will be more successful if you kill the condemned queens two or three days before uniting.

CRIMSON CLOVER is also called scarlet clover, German clover, German mammoth clover, and Italian clover. Its botanical name is *Trifolium incarnatum*.

THAT SCREW-EYE of F. A. Gemmel, for fastening number-tags on hives, is good—easier to use, and more secure. With nails some of my tags have been lost in hauling.

ABOUT THE TIME I'm writing this, bee-keepers are focusing toward Toronto. How I'd like to see them all! [So say all the members who couldn't go, I imagine.—ED.]

SPEAKING on p. 670 of the very rare instances when queens sting folks, you might have added that, in rare instances, a virgin queen has been known to sting to death a worker. Seen 'em.

HONEY CLOVER and bee clover are among the common names of balsam clover, *melilotus ceruleus*. From the names one would think it ought to be a good honey-plant. But does it grow this side of Germany?

PARIS GREEN, according to C. L. Marlett, in *Insect Life*, is made in grains unnecessarily coarse merely for the sake of looks. It can be made fine at less expense, and will remain in suspension three times as long.

PUNIC BEES are no longer mentioned. Yet wherever any of that jet-black blood is left in my apiary I find good workers. But they're cross, and not fit to make comb honey. They make watery combs, and, oh the bee-glue!

MY VERY YELLOW BEES are very gentle, and, so far as I can judge, good workers. But I object to the opinion that they or any others are good because they are very yellow. [That's the point; but the reports—that is, the great

majority of them—show that they are not good workers or good at any thing else.—ED.]

HONEY VINEGAR is perhaps not made as much as it should be. A writer in *British Bee Journal* says, "By using an extra quantity of honey one gets a splendid acid beverage that will compare favorably with raspberry vinegar."

IF A. I. Root gets everybody on a strictly meat diet, what in the world will he do with all his garden sass? [That's a conundrum that has come to me. We'll see him going into cattle-raising as his next hobby; so, look out.—ED.]

THE HEDDON HIVE, says the *British Bee Journal*, "had a short run of prominence here for a short time, but soon fell into disuse among British bee-keepers." [But why? is a question a Yankee would ask. Will some English cousin please tell us?—ED.]

THE AVERAGE YIELD of a good colony is set down, p. 670, as "anywhere from 5 lbs. to 75 lbs. of comb honey." You might lower the smaller number about 25 lbs. [That's true; but then it couldn't be called a "yield." I was talking about yields, don'tcher know?—ED.]

"IN ENGLAND, where crimson clover is grown with some difficulty, it is said to winter-kill if sown on newly plowed land, but to pass the winter uninjured if merely harrowed in on stubble."—*Bulletin 125, Michigan Experiment Station*. That is, sow on hard rather than mellow ground.

CHORDIS STULL says the rule about drouth making tomatoes rot doesn't work in this locality, where many acres are raised. Drouth was worse this year than last, vines dying this year from drouth, but not one tomato rotted this year for ten last, until the recent rains. Since the rains they're rotting badly. [It works just the other way here.—ED.]

SAY, ERNEST, tell us more about that paragraph, "Large Colonies for Honey," p. 673. Did you get any section honey from a colony in two eight-framers? [Now, you shouldn't ask such questions. That whole apiary was run for *extracted*; don't you remember my saying

so? Say, but if I had run for *comb*, I am afraid there wouldn't have been so much on those double-deckers. What more do you want me to tell?—ED.]

RAPE is a great honey-plant in Germany, and perhaps elsewhere, but is little known in this country. The *Stockman* thinks it is destined to become much better known here; and Prof. Thos. Shaw is "certain that it is to be a great factor in solving the problem of cheap-mutton production." "Am pasturing six sheep and ten lambs in fine form on an acre of land."

IF BEES STEAL eggs from other hives, W. Woodley asks in *British Bee Journal*, "why do colonies ever die out from queenlessness after breeding has commenced in the spring, and eggs can be had for the fetching from other hives?" [It was never claimed, if I am correct, that bees always steal eggs, but only that there was strong evidence that they have done so under pressure.—ED.]

I NEVER DREAMED that any one would understand that straw to which S. T. Fish & Co. refer on p. 669 as meaning they were not entitled to having consignments. It simply meant that honey was so scarce that prices must go up before consignments would pour in. The Honey Column for Sept. 1 justifies my anticipation. No quotations are lowered, and some have gone up a cent or two.

NUMBER-TAGS of manilla well-soaked in oil look very promising. They cost so much less than tin that we can try a set; then if they give out in too short a time we can turn to tin. But I earnestly entreat you not think of giving us figures less than $1\frac{1}{4}$ to 2 inches in height. After Mr. Winder has put 1-inch figures to a fair test he'll want to stretch them. [Yes, we'll have respect for the larger figures.—ED.]

MR. M. M. BALDRIDGE speaks almost complainingly of the cropping of sweet clover by stock on the wayside. Nothing pleases me better. For when the stock and its owners both find out the value of sweet clover as a forage-plant it will soon find a permanent lodgment in fields. And I'd rather see every plant on the roadside cut down; but I wish they would cut it before blooming. Then we get greater value in later blooming.

AUGUST 9, put in No. 20 bees with brood and queen-cells. August 26, found present a virgin queen with one wing torn away. Killed her and began distributing the bees and comb, when I found another virgin queen with whole wings, neither of the queens appearing very young. The latter queen began laying Sept. 3. Did each queen have a faction of adherents loyally protecting her, or how was it? [Are you *sure* the wing of the first queen was torn away? I should guess that she was "born" so. Still, it is not improbable that the wing could have been removed by the bees.—ED.]

SPACING-STICKS for keeping top-bars at fixed distances, who invented them? After they become well glued, and I try to use them, I feel an ardent desire to use one of them to whack the head of the man who got me to try them. [I may as well confess that I was the man who got the doctor to try them. Another chap put the idea in my head; and before I tried them I sent some of the sticks to the doctor, and this is the way he would use me. Well, I don't blame him; for, after I had tried them, I felt just like, like — kicking myself and the "other chap" too. No, sir; I want spacing-devices to be part and parcel of the frames themselves. They are a mistake when made detachable in the way of sticks or when a part of the hive-body itself.—ED.]

THE HOUSE-APIARY described on p. 662, if I understand it correctly, costs \$3.36 per colony, besides cost of hive. There ought to be a very big advantage to offset that. [That's true; but this figure covers winter protection—that is, saves packing-cases or more expensive double-walled hives; or toting bees in and out of cellars every fall and spring as you do. Again, it saves in economy of room; saves steps, as the hives are all close together, and saves disagreeable outdoor robbing. The house is a big advantage in the matter of extracting and in fall feeding. It can be locked; and bees, honey, and all be tolerably secure from petty thieves. Tools, such as smoker and the like, always under protection from the weather; and it makes no difference what the weather is, the apiarist can work right along. Last of all, the building may be used as a temporary storage for honey just taken off. The outdoor plan usually calls for a little building for tools, storage, and a general shop. The expense-item, if considered in the long run, is rather in favor of the house-apiary.—ED.]



THE HIVE QUESTION.

EXTRA LARGE HIVES NOT ALWAYS MOST PROFITABLE; LARGE AND SMALL BROOD-CHAMBERS COMPARED.

By B. Taylor.

Editor Gleanings:—After reading the five or six interesting articles in July 15th *GLEANINGS*, on large or small hives, I can not refrain from adding a final word. I have been making some careful observations directly in that line this season. I am now trying to earn a living by raising honey, and am very anxious to find and have the advantage of a hive that would give best results, and would at once use a large hive

if I could find the proof that such was best. Now, I have learned by experience that extra-large swarms are not always the most profitable. Such, as a rule, are the ones that give trouble by deserting their hives, after being hived, and that whether they are hived in large or small hives; and I also *know* that they do not always make the most surplus, even when they work contentedly; yet I like fairly large prime swarms; and as the large-hive brethren are always talking and writing about the advantage that their large hives give in sending out larger swarms, I concluded to try some careful experiments in that line. So last spring I put out some ten swarms in hives containing ten combs 13 inches long inside the frame, $6\frac{1}{4}$ inches deep, 80 inches in each comb, or 800 in the hive. As many more contained 1000 inches in the hive, while 25 contained 1600 inches each. All the hives contained colonies of nearly equal strength, but with a little advantage in favor of the large hives. All of these had abundant natural stores, and were treated in other respects as nearly alike as possible. The 1000-inch hives produced the first swarms, closely followed by the smallest ones. Some of the large hives swarmed reasonably early; and where they did, the swarms were in no case extra large, but in some cases smaller than those from the *smallest* hives.

I had said nothing to my son, who, in most cases, put the swarms into the catchers; but he very soon came to me and said that some of the very largest swarms were coming from the smallest hives. Two years ago I told in the *Review* how I had produced the second largest amount of comb honey I ever raised from a single colony (250 lbs.), all the bees of which were raised in one of those little 800-inch hives. That hive swarmed rather late in the season, but the queen did not follow. The swarm returned, and did not come out again, and this queen had been marked for destruction the previous fall on account of seeming inferiority that season.

The swarms I have mentioned as coming first came just as or a little before the white and alpine clover bloomed here, and have made what white honey I shall get this year. Near the close of the clover season most of the large hives swarmed, and the swarms were very large—much larger than any from either large or small hives that swarmed early, and some of them cast second swarms of great size.

Now, friends, these large hives had made no section honey worth mentioning, previous to swarming—not nearly so much as the smaller ones; and need I point to the fact that these great swarms came *after* the battle for this year was over? and unless the fall differs from those of 1893 and 1894, they will prove worthless. If there is a good fall flow of nectar, which seems promising now, they may partly redeem themselves; but the swarms that have made

considerable white will share equally in the benefits of a fall flow.

I always read Mr. C. W. Dayton's articles with interest, whether I agree with him or not. Bro. Dayton is both a thinker and experimenter, and always has some demonstration to back his opinions. I am not surprised that he has come to the same conclusions in regard to hives, nearly, as myself. *He has been at work.*

I remember that, at the national meeting at Chicago, in 1893, a vote was taken, both for and against double brood-chambers. Some fifty votes were cast. Nine-tenths of them condemned such hives. Those who had tried such hives were then asked to stand up. Some four or five arose; the other forty or more had nothing but *prejudice* and lack of knowledge upon which to base an opinion. Thus we go blindly through life, condemning those who have *searched* for truth, and in religion and politics, honestly believing that things that are right are wrong, and that things that are wrong are right. Let us prove things by investigation, and hold fast to the things that prove true.

Forestville, Minn.

[Since the above was in type, Mr. Taylor has sent us the following by way of explanation of a few points.—ED.]

Editor Gleanings:—I wrote you an article a day or two ago, on the effect that the large hives have on the size of swarms. There was one point I ought to have mentioned in that article; viz., the quality of brood-combs. I have eight hives of the Langstroth ten-frame size that I took of a friend last spring. An examination of them has led me to make that explanation. Now, as a part of my last article, these Langstroth hives contain nearly twice as many inches of brood-combs as my smallest hives mentioned in that article. The combs had been built on wide strips of foundation. The consequence was, some frames were filled nearly solid full with drone comb, and there is scarcely a frame but has some drone comb in it. The consequence is, my 800 inches of comb in the small hives has more worker comb than one of these big ten-frame hives. Let it be borne in mind that all the hives mentioned in the experiment were solid full of *worker* comb. I have fifty hives now in the apiary that have not enough drone comb in them all to fill a single frame. The combs were built on worker foundation, in frames with horizontal wires, so that all sagging was prevented, and all bee-spaces are not over $\frac{1}{4}$ in.; so there is no place for drone comb in them. I have examined hives in which I could not find a single drone-cell. This is the best drone-trap ever invented: *Raise no drones to trap.* I have heard it suggested that such colonies would not swarm; but it is all theory and no fact, like many cherished notions in all trades 25 years ago. In the afternoons the drones would fly from the hives, with a roar like

a waterfall; but now there is never heard that death-knell of *paying* honey crops in our bee-yard, in such a year as this. The conditions existing in our apiary twenty years ago would render any surplus impossible. I shall get some surplus. So much for modern improvement.

Forestville, Minn., July 23. B. TAYLOR.

[Heretofore the testimony has seemed to show that there were more swarms with small than large hives, but your experience seems to be the other way. Has any one else had experience similar to Taylor's?—ED.]

A TEN-FRAME HIVE AND A GOOD QUEEN.

I am becoming interested in the hive question, and will tell you the hive I want. It is the one that has the best queen in it, and it takes a ten-frame Simplicity hive to hold her with three T supers on top; but two are holding her this year. So far she has 46 sections finished to date, and I run 20 ten-frame simplicity hives of bees, and 37 eight-frame hives of bees this year. Out of the 20 ten-frame hives came 4 swarms; 37 eight-frame hives cast 27 swarms. That's how they did this year with me. What has become of G. M. Doolittle? Have him wake up and tell us all about what kind of hive to use. H. W. VANKIRK.

Washington, Pa., July 23.

TEN-FRAMES AHEAD.

I should like to add my mite to help out the ten-frame hives. Let your arguments in GLEANINGS go on a while, and we shall find out that many have changed to the eight-frame hive against their own pocketbook. I have always been afraid to leave the ten-frames, so have kept half in each for five years. The tens are always ahead. I have this spring 40 colonies—20 eight and 20 ten-frames. Seventeen of the tens have ten frames below, and super with from 10 to 25 lbs. in. and only 5 eight-frames have the average 10 to 25 lbs., and are ready for supers. The rest have no supers on yet. I use half-depth extracting-supers at first. It is very cold here at present. C. G. NEVIUS.

Chiles, Kan., May 23.

SHALL THE HIVE DISCUSSION CLOSE?

I have read with so much interest the articles on small vs. large hives that I am sorry to see the argument close. I am a bee-keeper on only a small scale, but I want to have the proper size, as I expect to engage more extensively in the bee business in the future. I believe the location is the greatest problem to solve, so that we can arrange the size according to it. We know positively that, the more space we have in the brood-chamber, the more bees it will require to keep it warm; the more bees you have, the more honey it takes to carry them through the winter; hence you have it in a nutshell.

And now, Bro. Root, if you will allow me I

should like to give you my experience with three hives during this summer, and I will try the same thing again another season if I live. It is this: I took the three hives and placed them side by side, and had the same kind of bees in each hive. One hive contained nine frames, one eight, and the other six. The eight and six are thick top-bars, and the nine are $\frac{1}{2}$ -inch. I have not 1 lb. of surplus from the nine; got 10 lbs. from the eight; and 20 lbs. from the six; and to-day the six has 10 or 12 lbs. on, while the others have none; so, now, which hive can I chose for business?

Blacklick, O., Aug. 15. D. N. RITCHHEY.

A FEW FACTS AND FIGURES IN FAVOR OF THE TEN-FRAME HIVE.

GLEANINGS is a welcome visitor. I think you might just as well give up the discussion, because the location and honey-flows make all the difference of opinion. I started with ten-frame hives several years ago; then when they made the strong claims for the eight-frame hives. I put one-half in each, eight and ten frames. With my location as to honey-flows, my ten-frames store 2 lbs. to 1. The eight-frame hives and the eight have done all the swarming until this year, when the swarms all came from the ten-frame hives. The cause was, the ten-frames stored enough honey from fruit-blooms to carry them through to the next honey-flow, while the eight-frames nearly starved. These are about the amounts that they have stored this year so far:

18 colonies, 8-frames, 230 lbs. comb. 300 lbs. ext.
20 colonies, 10-frames, 400 lbs. comb. 600 lbs. ext.
Two best 10-frames stored 100 lbs. each.
Two best 8-frames stored 30 lbs. each.

We always have a fall flow commencing the 20th of August. The prospects are the best in four years.

C. G. & W. V. NEVIUS.

Chiles, Kan., July 22.

[This is the first letter we have received intimating that the hive discussion had better be discontinued; but if we can get a few facts such as are here given, it ought to go on a little further yet. To have stopped it three months ago would have left us but little wiser than when we first started out; but now we have learned what a bearing locality has in the matter; that there are more using ten-frame Langstroth hives and deeper hives than we supposed. But if even a few vote to have this discussion discontinued we will do it.—ED.]

RAMBLE 140.

AT M'CUBBIN'S.

By Rambler.

On the 26th of November Mr. McCubbin devoted a good share of the day to driving the Rambler out among the bee-keepers. Our first call was upon Mr. C. M. Davis, who had an apiary of 125 colonies upon the home ranch, and another apiary 60 miles away, over on the



MR. J. C. MCCUBBIN GRADING HIS COMB HONEY.

West Side. He was engaged in getting his honey ready for market.

Mr. R. E. Zimmerman was another prosperous bee-man, and very patriotic. He had just been elected to serve his country as constable, and did not seem to wear any larger hat than we common people. He was more successful as a candidate than our friend McCubbin. The latter was also patriotic, and ran for office; but owing to the fact that he belonged to the right party he was not elected.

Mr. Zimmerman is the happy possessor of 225 colonies of bees, or was at the above date. His apiary showed something of the wear and tear of the late political strife; and, the soil being of a very productive nature, the weeds had gotten the start of him; but in spite of politics, a dry season, and healthy weeds, his best apiary of 120 colonies had averaged 60 lbs. of comb honey to the colony, and he was busy at work in a cheese-cloth honey-house getting it ready for market.

Mr. McCubbin's apiary of 143 colonies was nicely located upon what I should call very poor soil. Even weeds would not grow there. It is, however, possible that his political sentiments of prohibition went so far as to interfere with the personal liberty of the growth of the weeds. If so, I have no doubt the weeds loudly protested, as all weeds do in the moral world when an effort is made to root them out. I mentioned the fact that Mr. McC. had several tons of honey in his residence in town, and here in his honey-house at the apiary were several tons more which had just been taken from the hives, and was ready to be graded. I secured a fine photograph of our friend and his honey.

Mr. McCubbin is something of a genius, and believes in short cuts to save labor. The photo shows his portable shelves and his method of using them. The shelf is constructed by nailing together at the edges two boards, six or eight feet in length, twelve inches wide, then nailing in square end-pieces as shown. In use, these shelves tier up; the honey is brought from the hives, taken from the supers, and placed upon a shelf. When this is filled, an empty shelf is tiered upon it, and so on until a large amount of honey is upon the shelves. Two smaller adjustable shelves or brackets are attached, and moved as the operator requires, while grading and packing.

Eight sections of comb are placed together upon the little shelf. In Mr. McC.'s hand is shown a small V-shaped strip. One of these strips is nailed upon each corner of the sections. The eight sections thus held compactly together in one box, as it were, are then packed into the crate shown upon the upper shelf, holding 48 sections.

The adjustable bracket upon the middle shelf is a handy receptacle for nails and strips.

Mr. McC. thinks he can work much faster this way than to crate from the supers as they are taken from the hive.

The section used by our friend is $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$, and holds a trifle over 12 oz. Many bee-keepers use this size section about Selma. The preference is gaining ground for a section that will hold a full pound. From 140 colonies Mr. McC. secured during the last bad year 6300 lbs. of comb honey and 1500 lbs. of extracted.

The increase in Central California comes early; then there is a dearth of honey in May, followed by a flow of nectar all through June, July, and August. The early alfalfa bloom yields but a small amount of honey as compared with that secured from the later bloom; and the early and late maturing of blossoms lengthens the honey season. Here it is a period of sweetness long drawn out.

Apiary work commences here in March, as it does further south; but instead of ending in July, as it generally does in the southern counties, the bee-keeper is kept quite busy clear up to December. The few intervening months are profitably spent in preparing for the coming season. Central California bee-keeping needs no side issues, for there is enough to it to make it an all-the-year-round business. In the little town of Selma there are seven bee-keepers. Their apiaries are located at various points all the way from one mile to ten from town; and several progressive men like Mr. McCubbin devote their entire time to bee-keeping. One of these progressives is Mr. O. W. Stearns. He resides in a pleasant home in the suburbs. His apiary of 390 colonies is out of town; but he has a few colonies near the residence, just to hum around and keep him company. Mr. S. manages on economical principles, making hives of gasoline and oil cases; and while he practices economy outside the house, a worthy helpmeet manages things in the house and shop, and attends to many little details that would escape the attention of the men; for instance, Mrs. S. saved 14 lbs. of nice beeswax which she made from scraping sections and frames that had been thrown aside as worthless. From the amount of beeswax I have seen wasting in many California apiaries it would be an excellent idea for many more ladies to take a hand, especially in the wax management of bees.

Mr. Stearns said that, from 30 colonies, spring count, he increased to 71, and obtained 5000 lbs. of comb honey. To further demonstrate what his bees were doing at that date, Nov. 27, Mr. S. opened some of his coal-oil-case hives and showed us combs that had been drawn out, and well filled with honey, but not sealed. Holding up a new comb, "This," said he, "has been drawn from foundation, and filled, as you see it, since election day. The product was grape honey. As the reader is probably aware,

all of this country around Selma and its neighboring city of Fresno, is planted largely to grapes, and the product of the vineyards is, to a great extent, raisins. After the harvesting of the main crop, there is more or less of a fall crop that nearly all goes to waste. Birds and insects live upon them, and the bees bring in much of the juice; and, from the sample of comb shown, it answers for drawing out foundation, and bees will winter well upon it, for I have in mind parties who pressed out the juice and fed it to their bees in Southern California with success. The product from the Stearns hive would not be pronounced good honey, for it had not undergone very much change. It was grape juice still, and had a distinctive raisin taste.

Although our friends had nice comb honey, all they were offered by dealers was 8 cts. per lb., and the most of it was sold at that price. They were, furthermore, suffering from a rank injustice in relation to tare on honey-cases. Upon a case weighing 4 lbs. a tare of 7 lbs. was taken; upon a 6-lb. case, 9 lbs. tare — a clear steal of 3 lbs. on every case. Individual action in shipping was hampered by the railroads charging excessive freight rates upon less than car lots; and as but few bee-keepers produce carloads of comb honey they have to submit to the extortion. Coöperation, it seems, would help the bee-keepers of Central California, as well as the bee-keepers of the whole country. Let's have coöperation.

Mr. Wilder and I concluded that we should like to enjoy the hospitalities of Bros. McCubbin, Zimmerman, Stearns, and a host of other bee-men, for several days; but the clouds, and a sprinkle of rain, admonished us again to be on the road, and we left our friends, feeling that Central California, though not written up to a great extent, is a honey-producing location that will attract more attention as the area of alfalfa is increased. We also desired to turn aside from our route and look up the honey resources of Kings Co., and around about Tulare Lake. In Lemore, Kings Co., resides Mr. J. F. Flory, a gentleman not unknown to the readers of GLEANINGS, and an extensive honey-producer, not only in Kings Co., but also the West Side. We could only look that way while our ponies were speeding toward Bakersfield.

KEEPING TOPS OF SECTIONS CLEAN.

A BEE-SPACE BETTER THAN QUILTS OR SHEETS, AND WHY.

By Dr. C. C. Miller.

A correspondent thinks some one should invent a way to keep the tops of sections clean. I don't feel very sanguine in that direction, as to any great improvement over the present. There are two ways in practice. One is, to leave the

tops entirely uncovered; and the other, have them covered. If left uncovered, there is nothing to hinder the bees from putting on all the propolis they like. With a cover of enameled cloth or any other cloth, the bees push glue into the crevices, and gradually raise the cloth until the glue is a quarter of an inch thick and all over the top. A rigid cover of wood is not so bad; but I never saw any thing of this kind but that the bees could squeeze in a line of glue along the edges. Perhaps it is because it is impossible to have a perfectly close fit with a rigid covering.

The only way I can think of to have something fit down close enough would be to have a cloth cover; then over this lay a bag of sand, so that the weight of the sand might press down at every point. It is possible, however, that it might take something like a wagonload of sand to press down hard enough so the bees could squeeze in no glue.

On the whole I have been best satisfied to leave the tops of the sections free for the bees to manage as they like. Watch closely and see how the bees manage a super in which the sections are left uncovered, and one at the same time in which a slat covers them. In the early part of the season propolis is not so plentiful as later, and bees don't seem called upon to use it as a varnish, except to glue up cracks and crevices. They will crowd in glue over the edges of the covered sections, and leave the uncovered sections clean. Later on, after the white-honey harvest is over, there seems to be a surplus of propolis, and it is smeared everywhere, even on flat surfaces. At this time the uncovered sections get the worst of it, being painted all over, while the covered ones are clean, all but the edges.

As we can generally manage to get sections off before the glueiest time comes, I think less glue will be found on the sections left entirely uncovered, and we must be satisfied to scrape off all we find.

NEW THINGS.

"Why is it, doctor, that people seem always ready to down a new thing?" writes a friend. The first part of the answer to that is, they're not. What bee-keeper is there who hasn't a lot of traps stored away somewhere, or lying kicking around, showing the many new things that were received with favor, only to be found wanting when tried? Witness the favor with which the Chapman honey-plant and other new honey-plants were received. But who has a field of them now? All of which goes to show that, as a rule, people are not down on new things to an intolerable degree.

As experience tells us that the majority of new things will not prove desirable, it is only right that, when a new thing comes up, we should want to know all we can about it. Foundation with a veneer base is instanced.

You think it looks nice, and you regard it with great favor. After you have fully tried it, your word will be worth more, whether your decision is adverse or favorable. And until you have tried it you want all the light you can get. I've tried something a little like it, foundation with a base of paper or tin foil. I'm pretty sure you'd want to know how that succeeded, and those who have tried any thing of that kind, and failed with it, ought hardly to be censured for telling of the failure.

But you say, "There are new things that are good; why not give a level-headed judgment always, and tell us in advance what things are worthless and what are worth a trial?" Dear me! who knows enough?

Marengo, Ill.

[Yes, it is true that most new things are not what they seem to be at first. Another instance is the Langdon non-swammer device. On paper it looked like a "big thing," but in the practice of bee-keepers generally it did not prove to be such. Reversing of brood-frames and hives was another new fad that rose and died again. Contraction of the brood next had its day, and now is gone largely into disuse, and so I might go on and name a lot of others. But bee-escapes, among the more modern "new things," especially the Porter, stands out as a brilliant exception.

Your friend refers to wood-base foundation as something new. Why, that is, I was about to say, one of the very old "new things," if I may use such language. It had its day years ago. Now the question is, shall it have another? The fixed-frames idea was an old fad, and came near being left out the catalog of modern appliances altogether. But experience has shown that it was condemned too hastily, and that because of their real merit they were bound to come up again and stay up. I hardly think this experience will be duplicated in the case of wood-base foundation.—Ed.]

ITALIAN OR CRIMSON CLOVER.

TRIFOLIUM INCARNATUM, ETC.: AN OLD HONEY-PLANT IN ENGLAND.

By Samuel Simmins.

Editor Gleanings:—I have been interested in your experimental trials with this clover, and notice your request in GLEANINGS for August 1. You appear to consider it, or its honey-yielding qualities, as something only recently discovered. You will find it mentioned in "Modern Bee Farm," 1887 edition, and on page 55 in the later issue, of which I had the pleasure of forwarding you a copy. The plant has been known to and appreciated by bee-keepers here for many years. Around our large towns it is sown in extensive areas, being cut for green food and sold to owners of town stables, as well as greatly valued for home use. Bees simply roar on it, and store heavily for the few days it is in flower. That time is short, as it is usually cut before reaching full bloom. If allowed to stand for seed, however, the bees have access to it for from six to eight weeks at a stretch, and in good weather there is a continuous hum over

the field. The honey is light in color, and of fair flavor. There is also a *white* variety, but I am not aware that it is as useful for honey. Like most clovers, the seed can be sown to make a profitable crop only in the autumn for the following year's use.

I have sown this summer (July) buckwheat, trifolium, and melilot clover on the same piece of five acres. The buckwheat has come in bloom within one month from sowing. The mixed clovers are coming up nicely, so that for hay the crimson clover will be cut in ordinary course early next June, with a tender growth of melilot not in flower. Alone, the crimson clover makes poor hay, or, at least, it lacks scent, which the melilot supplies, and that one of the most fragrant kind. By cutting at that date, the flowering sweet clover to follow does not become so coarse as otherwise would be the case, and therefore is of more use as hay.

After once cutting, the scarlet clover is of no further value, though a few heads may again appear. Another piece of ground I shall have clear next spring, I propose to treat in a similar manner, except that in March, or earlier, mustard will be sown to come into flower from the middle of April, to be plowed in just as the final blooming is over. Buckwheat put in in June, harrowed and rolled, waiting for a wet season, any time up to September, before sowing the mixed clovers, as before; with no harrowing or rolling, as the buckwheat will be up and in flower.

It should never be forgotten that all clovers germinate best—in fact, *only perfectly*—when scattered on the very surface of the ground; therefore wait for a wet time if possible before sowing, and in three days the ground will be smothered with the new-born plants. Of course, the ground is to be got down fine and firm in the first place; and in dry weather, with no other crop up, it may be rolled after seeding, to advantage; but *never* rake or harrow *after* sowing clovers of any kind. Many a farmer has lost a crop—and a season—through sowing fine seeds previous to harrowing, and before rolling at all, thus setting it too deep for germination. Never omit to do both some time before; roll again after sowing if dry, but do neither after if a wet season can be waited for. Above all, never omit to roll down as hard as possible the following spring, as soon as the frosts are over, or the plants may fail to root properly again after the usual loosening of the soil—the result of the freezing.

Apart from its duration if left for seed, a succession of bloom may be had by cutting a part of the crop of trifolium *before* flowering at all, when, of course, that portion will come forward again, to bloom freely after that left standing has declined.

You may naturally ask, "Can not a succession be had by sowing at different times? or

will not the white and red varieties bloom at different dates?" So far I can give no satisfactory information on this point. Both appear to bloom at the same season. The plant must be started the year (autumn) before; and, whether sown earlier or later, the time for blooming is at the same period.

By far the best way is to work for a succession, as I have already shown, with different plants, which are all at their best in their own respective seasons, plowing under the last crop of mellilot as the bloom fails.

In the ordinary way, the farmer sows over wheat, oats, etc., after cutting and carrying those crops (August to September), without cultivating, and therefore, of course, on pretty solid ground, and very little is needed besides rolling the following spring. A thin crop of trifolium is seldom seen. My directions, however, refer to cultivation for bees and forage. The buckwheat, of course, is always a valuable crop for its seed.

Seaford, England.

THE WEIGHT OF BEES, LOADED AND EMPTY.

THE MOST ACCURATE FIGURES YET GIVEN.

By Prof. B. F. Koons.

Friend Root:—Some two years ago, in a leisure hour I went to my apiary and captured one outgoing bee from each hive and subjected them to the fumes of cyanide of potassium for a few moments to render them inactive, and then weighed each bee upon our chemical balances—a pair of scales so delicately adjusted that it is an easy matter to weigh the one-millionth part of a pound or the one-thousandth part of a bee. From the weight of each separate bee it was a very simple problem in arithmetic to compute the number of bees in a pound. The results showed that mine, which perhaps are a fair average in size and weight, ran from 4141 to 5669 in a pound. These results you published in GLEANINGS, and there expressed a wish that I would also determine the amount of honey carried by a homing bee. In my research for the weight of bees I took those just leaving the hive, which naturally would represent the normal weight, having no extra honey or pollen on board.

During the present summer, when the bees were very active, I have undertaken to carry out your request as to the amount of honey carried by a bee. My method was this: From the chemical laboratory I secured a couple of delicate glass flasks with corks, marking them A and B. Each was very carefully weighed, and the weight recorded. I then went to a hive, and, with the aid of a pair of delicate pliers, or pincers, I captured a number of incoming bees and dropped them into flask A. I then secured about an equal number of outgoing bees in flask

B. These were then taken to the laboratory immediately, and each flask again weighed, after which the bees were carefully counted and released. This operation was repeated quite a number of times, not on the same day, but as opportunity offered, and when the bees were bringing in an abundance of honey. I captured from 20 to 45 bees for each flask at each trip, aiming to have, as nearly as might be, the same number in each flask on any particular trip. I always weighed the flasks before starting out, lest some little bit of soil or stain, or even moisture on the glass, would render the results less accurate; I also always allowed any moisture condensed upon the inside of the flasks, while the bees were confined, to evaporate before weighing for another trip. I then treated my results as follows: From the weight of flask and bees I deducted the weight of the flask; the remainder I divided by the number of bees confined on that trip. This gave me the average weight of the bees captured at that time. The average weight of the bees in flask A, or loaded bees, was always greater, as it should be, than the average weight of the bees in flask B, or unloaded bees. The difference between these two weights gave me the average amount of honey carried by that lot of bees.

Mine are Italian and hybrid bees, but I made no attempt to determine the difference in the amount carried by the different swarms or breeds. I kept no record of the swarms, except that I guarded against going to the same hive for a second lot of bees. A considerable difference does appear, but probably that arises in part from the abundance or scarcity of the honey on that particular day on which the colony was visited. My aim was to secure reliable results, as nearly as possible, representing the average amount of honey carried by bees.

The following is the result of weighing several hundred each, of the returning and outgoing bees. The smallest number of bees necessary to carry one pound of honey, as shown by my results, is 10,154; or, in other words, one bee can carry the $\frac{1}{10154}$ (one ten thousand one hundred and fifty-fourth) part of a pound of honey; and the largest number, as shown by the results, required to carry a pound is 45,642; and the average of all the sets weighed is 20,167. Perhaps, then, it is approximately correct to say that the average load of a bee is $\frac{1}{20167}$ (one twenty-thousandth) of a pound; or, in other words, if a colony has 20,000 bees in it, and each makes one trip a day, they will add one pound to their stores. Of course, not all the bees in a colony leave the hive, the nurses remaining at home, hence necessitating more trips of those which do "go a-field."

I also repeated my observations of two years ago on the weight of bees, and found that my numbers ran from 3680 to 5495 in a pound, and the average about 4800, the same as in my for-

mer test. I likewise secured the following on the weight of drones: Of a dozen or more weighed, the largest would require 1808 to make a pound, and the smallest 2122, or an average of about 2000 drones in a pound, over against nearly 5000 workers.

Bees have been doing reasonably well here in Connecticut this year. I keep my apiary reduced to 12 colonies, and from these I have secured 450 lbs. already, and shall perhaps have 150 more at the end of the season, and an abundance of stores for the winter.

The excessive drouth of 1894, and this year in June and early July, almost completely cut off the supply of white clover; but chestnut, sumac, buckwheat, and goldenrod, have yielded well. Basswood is too scarce in this State, particularly in the eastern half, to be counted among our honey-producing plants.

Agricultural College, Storrs, Ct., Sept. 3.

[I consider this the best article we have ever received on this subject—the more so because it comes from a practical man of science, and president of one of our leading agricultural colleges. I have marked this article for insertion in the 72d thousand (next edition) of our A B C of Bee Culture.

In a nutshell, and speaking in round numbers, we may say that it takes 4500 bees to make a pound; and that, while 10,000 bees may carry a pound of nectar, twice that number, or 20,000, is probably more nearly the average. During basswood bloom, the first figure should be considered as the nearer correct one because the bees drop down at the entrance; and from almost all other sources of nectar the twenty-thousand mark is the one to accept.

Let us now look at these interesting figures in another way: A bee can carry half its weight in nectar; and perhaps, under certain circumstances, a trifle more; but, generally speaking, one-fourth its weight is the amount. A single strong colony has been known to bring in a trifle over 20 lbs. of nectar from basswood in one day;* but usually four or five pounds is considered a *remarkably big* day's work. If we figure that there were, say, in the first instance (20 lbs. per day), 8 lbs. of bees, there would be 36,000 bees. If 20,000 of these were field-bees, (estimating 10,000 necessary to carry a single pound of basswood nectar), those bees must have made forty trips. On the same basis of calculation, a colony of equal strength that brought in 5 lbs. would make one-fourth as many trips, or an even ten. This would leave for each trip one hour for ten hours; or, in the case of 20 lbs. a day, twenty minutes.

There, perhaps I had better not carry this out further, or I may get into a tangle.—ED.]

THE RULE OF QUEENS AND AFTER-SWARMS.

CLOVER AND BASSWOOD NOT YIELDING HONEY.

By W. S. Fultz.

Dr. C. C. Miller:—In *Stray Straws* in July 1st *GLEANINGS* you ask, “If instinct impels so many queens to leave with after-swarms, what

holds any in the hive? or will all leave if out of the cell?” Did you ever examine a hive that had cast an after-swarm containing several queens, to see if any were left in the hive? and if so, how did you always find them? In my limited experience I have examined several such, and always found one or more queens, either in the cell or running over the combs. I have never known a hive to swarm out entirely queenless—have you?

In another *Straw* you say that you have known clover to yield honey; but it was not this year nor last. Will you please tell us how long it has been since you knew white clover to yield honey? Here it has been about ten years since we have had any clover honey. The editor wanted to know why you didn't move over into Wisconsin, where there are basswoods. We have basswood here, but don't get any honey from it oftener than about once in five years. Last year it bloomed, but the bees did not work on it, although there was no honey to be had from any other source while it was in bloom. This year there is no basswood bloom, and our bees are starving on raspberry juice, and practically destroying what little crop the frost left. You might as well let your bees starve for want of clover honey as to move them and have them starve for want of basswood honey. If there is no change in the production of honey here it will not be more than three years before there will be no bees in the country. Farmers have all let theirs die, and the few experts that have been feeding have got tired of an outlay that brings no income, and most of them will let what few bees they have starve the coming winter, if they do not gather enough fall honey to feed them through.

I aim to keep about thirty stands of bees, that being as many as I can attend to besides other work. Four years ago I purchased 2000 sections, and have not bought any since; and from present indications I shall have enough for ten years to come. Three years ago I had 35 stands of bees. They have dwindled down to 26, two having starved this summer. I have not had a swarm this season nor last. We don't have to experiment here to keep our bees from swarming. They have no desire to swarm. I wish they had. May be some of those fellows who are experimenting to prevent swarming would like to get a strain of bees that don't swarm. If so, we have them. They won't fertilize fruit-bloom either. I have tried them for more than 20 years, and they are “no good” for that. If some one has bees that swarm too much, and he can warrant them to fertilize fruit-bloom, I'd like to trade.

Muscatine, Ia., July 8.

[Dr. Miller replies:]

I think the rule is, that more than one queen is left in the hive after an after-swarm, but I don't know that the rule is invariable. I for-

*We had one colony that brought in over 43 lbs. in three days; and Doolittle 66 lbs. in the same time from basswood.

merly thought that no set of bees would be so idiotic as to let their last queen go out with a swarm; but I think I have read quite recently of such a case in one of the foreign journals. We know very well that an after-swarm often contains a number of queens. If four or five young queens come out with the swarm, or even if more than one issues, is a third not as likely to issue as a second, and so on for any number? And yet I think it is very rare that all the young queens leave the hive. Possibly close observation would show that in such cases all the free queens do actually leave the hive, leaving only such as are yet in their cells; and if all happen to be out of their cells, queenlessness results.

As to the yield of white clover here, the last to amount to any thing was in 1893, although both last year and this year I suppose a very little white-clover honey was gathered. But it was only a fractional part of what the bees required for their own use. The whole matter doesn't look very encouraging; but here's the tune I whistle to keep up my courage: No one knows any reason why we do not have the same yields as in former years. The whole matter seems to be in obscurity; and so long as we know of no reason for the lack of harvests, is it not reasonable to suppose that next year may happen to bring a big yield? It doesn't cost much to whistle that tune, and it makes one feel more comfortable. C. C. MILLER.

Marengo, Ill.

HON. GEO. E. HILTON

AS A BEE-KEEPER LEGISLATOR; HIS CAREER IN POLITICS.

[I am always glad to hear of the election of a bee-keeper (honest ones I mean) to a public office, be he a Republican or Democrat or what; but it gave me a peculiar pleasure when I learned that my friend Mr. Hilton had been chosen by the good people of his district to represent them in the Michigan State Legislature. "For," I said, "he is not only a good bee-keeper, but an earnest Christian gentleman, loved by all who know him. His influence will be for good."

Some years ago we gave a brief biographical sketch of him as a bee-keeper, for then he had not come before the public as a State servant. I have obtained a sketch of his political career that I take a real pleasure in submitting to our readers, because it is something that any one may well be proud of—not so much for its accomplishment of all things attempted as for the earnest purpose in the cause of right and justice underlying it all.—ED.]

His political career, outside of his township and village, was rather a surprise to him. In the fall of 1892 there seemed to be no candidate in his district for Representative in the State Legislature. His party had not elected a full county ticket in twelve years. The county committee were casting about for some one to lead the ticket, and the chairman suggested Mr. H. as one who had always been a true Republican, and did not have an enemy in

the county. The committee at once decided that he was the man if he would run. He was waited upon to see if they could use his name. At first he told them no, as he did not feel competent to fill so important a position if elected; but he said he would consult with his wife, and report soon. She urged that he was competent, and ought to run if the party demanded it, though defeat was probable. That settled it, and he was subsequently nominated by acclamation. His opponent was nominated upon two tickets; but Mr. H. had a plurality of 425, and the entire ticket was elected.

The Speaker of the House, learning of his interest in behalf of good roads, made him chairman of the Roads and Bridge Committee, and in this capacity Mr. H. succeeded in passing the Good-Roads Bill, known as the "County System." Several counties have adopted it, and it is a success. Judge Hatch, of Bay City, wrote him as follows: "In ten years half the counties in the State will adopt it, and in twenty years Michigan will be a State of good roads.



HON. GEO. E. HILTON.

He was also interested in a bill tending toward reclaiming the semi-barren lands that Ernest saw in going from Flint to Manistee. There is no doubt these lands may be made fertile. The members from the lower portion of the State "stood in their own light," and the bill failed to pass, by five votes.

The other matters of legislation two years ago were of a local character that pleased his constituency so well that last fall they concluded to send him back, and he was again nominated by acclamation. The enemy said he should not go back, and succeeded in nominating the supervisor of his own township on their tickets, and yet his ticket in the first column looked decidedly lonely. But the harder the task, the harder one fights; and the result was a plurality of 923, and again every man on the ticket was elected.

He was, for his second term, given the important chairmanship of Committee on Railroads. In this capacity he has seemed to be able to please both

the railroads and the people. The Commissioner of Railroads, Lansing, Mich., at the close of the session, among other things said of Mr. Hilton that it had not been his lot to be associated with a man who had acted so impartially.

Among the numerous bills that Mr. H. was interested in, perhaps none received more attention than the one providing for a normal school in Northern Michigan; but in this matter we will let others speak:

The speech of Mt. Hilton, who pleaded earnestly for the farmers, pioneers, and home-makers in this comparatively new country, was most effective, and every representative listened and was touched. This section being new, and very remote from all the educational institutions of the State, the home-makers were unable to give their children the advantages so necessary to prosperity and happiness, because they are unwilling to be separated so long and so far, and because their means are limited, and must be wholly used in preparing the home. The impression made by Mr. Hilton was complete.—*Northwestern Tribune*, Mr. Pleasant, Mich.

Ed. Indicator:—Being present when the Central Michigan Normal school bill passed the House, I heard the speeches made for and against it; and in justice to your Representative, Hon. Geo. E. Hilton, I want to say to your readers, through your paper, that, of all the speeches made (and there were seven), that of Mr. Hilton's was pronounced by all who heard them, to be the best in argument, best in delivery, and most convincing in result. Mr. Hilton plead earnestly for schools and education generally, and especially for Central and Northern Michigan—these newer counties where the young do not have the opportunities offered that the older counties are provided with. It was a warm fight, and a grand victory for the partially settled counties north of the capital, and Mr. Hilton threw himself into the cause and made a speech. It was in support of Senator Shaw's bill; and thus Newaygo County has the honor of furnishing two champions for the noblest work of all—the education of the young.

LISTENER, in *Fremont Indicator*.

Mt. Pleasant, Mich., June 6.

During the last session of the Michigan Legislature there was a bill introduced by a member who had had a terrible experience as the result of bees being kept too near the highway. He and his friends were badly stung, and a span of horses he said he would not have taken \$300 for were stung to death. There seemed to be other members who had been stung, or knew of others who had been stung. When Mr. Hilton saw that the bill was going to pass, thus preventing the keeping of bees within 90 feet of the highway, he told the members that it would lead to endless litigation and family quarrels, and debar any one, owning a lot not to exceed four rods square, from keeping bees. He introduced an amendment so that it should read "from the center of the highway." The amendment was, however, defeated, and the original bill passed, and is now a law.

There was another bill introduced, making it a misdemeanor not to spray fruit-trees for the purpose of killing the enemies of fruit. This came from a horticulturist, and was a good bill for the orchardist. Mr. Hilton explained that it was worse than useless to spray while trees were in bloom, and succeeded in amending the bill, making the same penalty apply if trees were sprayed while they were in full bloom. The orchardist, knowing the bee to be his best friend, is pleased with the bill, which was passed as amended, and is now a law.

Last winter at Detroit he was elected a delegate from his district to attend the National Convention of Republican League Clubs, held at Cleveland June 19, 20, and 21.

[When I asked for a good photo of Mr. Hilton, the latter, in sending his own, sent along a couple of others that were, I thought, too good to be confined to the narrow confines of my own album, and I therefore asked friend H. if I might use them for the pages of *GLEANINGS*. To this he kindly consented. While our Michigan friend may or may not have a pardonable pride in his career as a bee-keeper and legislator, he *can't help* feeling a fatherly pride in those children.



There is one more thing I must say; and that is, in reference to railroads. We are too apt to feel that they (or, rather, their management) are only selfish and grasping. Mr. Hilton, who has had abundant opportunity for observation, says that he has not found them wholly soulless; that, if they are approached in the proper manner, they will, if it is just and right, often times grant important concessions.—*Ed.*]

DUMMIES OR DIVISION-BOARDS.

BALLED QUEENS: QUEENS CRAMP; ALFALFA A SUCCESS NEAR DR. MILLER'S.

By Emma Wilson.

Mr. Editor:—I don't quite understand your footnote on page 623. You say, "I very often pry over the entire set of frames clear to one side. This gives ample room for the removal of the division-board." Our frames are always pressed up tight against one side of the hive, leaving all the room possible for the dummy, to begin with. We could not possibly pry them any closer, no matter how much we might try, and I don't see how we could make any more room for the dummy than we have when the hive is first opened. Please tell us how your frames are arranged.

You also say that you call the dummy the division-board. Why? We have used both dummies and division-boards; and, while they are very similar, they are not exactly alike, and are not used for the same purpose. A division-board is used to divide the hive into separate parts, while a dummy is used to fill up space. Our dummies are smaller than our division-boards. If it is not incorrect to call the board in question a dummy, it is certainly better because shorter. If you don't call it a dummy, what do you call a dummy?

As I intimated before, the dummies seem to work all right in the hives with the latest Hoffman frames.

On page 635 George W. Martin says, after he clipped the queen she was balled; and on smoking the bees off he found her stung to death. I think that, if bees are left to themselves, they rarely sting a queen immediately after she is balled. Most likely, if he had closed the hive quickly he would have found the queen all right the next time he opened it—at least, it has worked that way with us. Blowing hot smoke directly on bees when balling a queen is about the surest way to cause them to sting her to death immediately. A very good way to free a queen, although it is an old way, is to drop the ball into water, when the bees will separate, and the queen can be easily picked up without any damage to her. I've never known a queen to be injured while freeing her in this way.

We had a very curious experience to-day, Aug. 27, while clipping a queen. Immediately after she was clipped she curled up and appeared to be dead or dying. She had caught her foot in the hind part of her body, and remained in that condition for some time. Just as soon as she was released she was all right again. Dr. Miller says he had read of such instances, but in all his experience he never saw any thing of the kind before.

About the first of August, while on our way to a Sunday-school convention, when we were six or seven miles from home I called the doctor's attention to a field of hay that was just ready to haul, by remarking, "Do you see that hay? It is the heaviest crop of hay I've seen for a long time." Dr. and Mrs. Miller were expressing their surprise when Dr. M. suddenly exclaimed, "I do believe it's alfalfa," and was out of the carriage very quickly, and found that it really was a large field of alfalfa. We halted and had quite a talk with the German who rented the place. He said that was the second crop they had cut this year. He was very enthusiastic in regard to its value, especially when fed to cows. He said this was the third year since sowing. If he could get such a crop of hay this year, when the hay crop was almost a total failure on account of drouth, it seems to me that alfalfa will prove to be a great boon to farmers. I wonder if it's not a little difficult to get a good stand in the first place. But, once there, it will come up of itself year after year. May be that's where our future honey crops are to come from.

Marengo, Ill., Aug. 27.

[Division-board is used by us in the catalog because it is an old name; and we don't like to confuse beginners by the change of a name, even though the new one might be, as it probably is in this case, more accurate. Experience that you and Dr. Miller can not appreciate has taught us the folly of these changed names when so very little is to be gained.

As you suggest, with the new-style Hoffman there is more room for the removal of the board than the old-style or real Hoffman. In the case of either, there are times when it is easier to take out a frame first. I myself follow no invariable rule.

I have had queens cramp in this way a number of times; but even when disengaging the foot, the "cramps" didn't go off immediately. I have had queens cramp or kink up their bodies when I was quite sure the feet were in no way responsible. I never knew the cramps to prove fatal to the queen.

In regard to the balling of queens, your experience is quite in line with ours.—ED.]

THE POPPY

AS A HONEY-PLANT: HOW THE BEES REVEL IN IT.

By Em Dee.

There are a few facts a close observer may notice, though he be but a tyro in bee-lore. I have read, and heard mentioned, the many and various flowers from which honey-bees mostly obtain their substance, and this summer I have taken special interest in observing their caprices among the flowers in my front yard. Passing by all other blossoms that have been mentioned by old and interesting observers I come at once to the flower which seemed most to interest them, and which I have not elsewhere seen mentioned—the poppy. I have, perhaps, a hundred different flowering plants on the premises, and, by reason of frequent irrigation with the garden-hose, it may reasonably be conjectured how thriftily those plants are kept in growing mood. All flowers received a liberal share of attention—some more, some less—some for honey, some for pollen; but I can safely say that none were so sedulously courted, none so pronouncedly caressed, as the single poppies, often termed "golden gate." Early morning found from one to half a dozen of the mellifluous insects upon each newly opened petal, and at dusky eve they were still to be seen actively filling their pockets with a pale-yellow pollen. But what most attracted me was the manner of their working, their reckless "bee-havior" in the frantic acquisition of the elements they wished to secure. Both Bro. York's Italians and the writer's German bees were equally rampant. They had forgotten their staid and decorous methods, and now abandoned themselves to acts of apparent lawlessness. They pounced down, regardless of previous possessors, and rolled in the mealy substance until every pistil was divested of its golden powder, and off they go, heavily laden, to their homes.

The question uppermost in my mind was, and yet is, whether possible that they obtain some particles of the narcotic elements of the plant (the poppy being, as your readers well know, that from which opium is made), which, if so, would account for their hilarious antics;

or if the joy of feasting on so luscious and abundant supply reasonably accounts for the peculiarity noted.

The suggestion seems pardonable, that, in view of so effective pasturage, would not all bee-keepers do well to sow abundantly of seeds productive of so beautiful flowers as the poppy? A profusion of these glorious blossoms greets the industrious each morning, more attractive, in their various colors, than the rose. They require no special cultivation; any kind of ordinary soil is available, and the results in the bee-hive speak volumes in praise of the poppy.

And lest me ask "ye editor" if the special flavor Mr. Root noticed in Bro. York's honey—regarding which GLEANINGS asks—may not be solved by the suggestion just made; i.e., may it not be the poppy that has given the honey the unaccountably delicious "bookay"?

[It is possible; but I should hardly think there would be enough of such plants to make any appreciable flavor in the hive. It takes acres and acres of blossoms to make any sort of showing in the hive.—ED.]



HONEY FROM RED CLOVER.

Question.—Reading in one of my papers not long ago, I came across the statement that red clover is a honey-producer, while I have been told by my neighbors that it is not. Will you please tell us which is right? I am a beginner in apiculture.

Answer.—Well, perhaps both, as they view it from different standpoints. Red clover is certainly a honey-producer; in fact, I believe that red clover gives more nectar than any plant or tree I know of, not excepting that famous honey-producer the basswood, or linden. I never pulled the blossoms from a head of red clover yet but there was honey or nectar in them, no matter at what time of the year it was; and the result is always the same, year after year; so I think that the question should be settled by this time in the fact that red clover always secretes nectar, or produces honey, if you please. Now, this fact does not clash in the least with the statements of your neighbors who have told you that the honey-bee does not work on red clover, as that is what they undoubtedly mean by red clover giving no honey. A plant may secrete honey profusely, and yet the blossom be so shaped that the honey-bee can not reach this honey without the aid of some other insect to break open the corolla, as is the case with the flowers of the plant known as "comfrey," and with the blossoms of the common whitewood. In both of these the wasps and other insects bite through at the base of the flower to get at the

sweets, after which the honey-bee swarms about these bitten flowers and collects what the wasps do not consume. In certain seasons, and in some sections of our country, the corolla of the red clover grows so short, from drouth or otherwise, that the honey-bee can reach the nectar secreted by the blossoms, in which case we get large yields of honey from red clover, as was the case in this locality some years ago, when my yield from each hive averaged 60 lbs. of very nice comb honey, after the basswood and all the other flowers which yield white honey were out of bloom. In other seasons the secretion of nectar is fully as good as it was then; but the corolla is so long that it is of little use except to the bumble-bees, as wasps and insects do not bite the clover-tubes. Any person viewing the fields of red clover at this latter period, with a view of deciding as to the value of this plant to the honey-bee, would be apt to decide that "honey-bees never work on red clover." As a whole, we can hardly calculate on much honey from this plant, for there are far more years in which the bees get little or nothing from it than there are those when the hives show a gain while it is in blossom.

HONEY CANDYING IN THE COMBS.

Question.—A statement appeared not long ago in one of our papers, to the effect that honey rarely candies in the combs, the same being made without any qualifications. Is such the case? I am sure I have seen combs nearly solid with granulated honey.

Answer.—If the honey is left in the hive the year round, then the above is very nearly correct; but I have never, in my recollection, had sealed honey away from the bees over winter without its candying, except where it was kept in a room kept warm by a fire all the while. Now, while this candying of honey in the combs is of no great disadvantage when such honey is to be used by the bees for the purpose of feeding, yet it is a great misfortune to have much of it in partly filled sections which are to be used the next season as "bait sections," as they are termed, when they are used to start the bees at work in the sections earlier than they otherwise would. Where thus used the bees do not remove this candied honey, but, instead, put the new into the same section with it, which gives the section of honey, when completed, an uninviting appearance, thus causing the same to become nearly a drug upon the market. To obviate this difficulty, all the honey remaining in partly filled sections should be removed in early fall, either with the extractor or by placing them over colonies which need feeding, so that the bees may remove the honey and carry it down into the hives for winter supplies. The sections can now be stored away in good shape for future use.

TAKING SECTIONS OFF THE HIVES BEFORE THE CELLS ARE ALL CAPPED.

Question.—I am told that no section should

ever be taken from the hive till fully sealed over. Is this right?

Answer.—As a general rule this is good advice; but there are times when the yield of white honey is just over, and the yield from buckwheat or dark honey is about to commence, that a loss in price may be the result if this is strictly adhered to. Mr. Quinby said, and with much truth, too, that all boxes two-thirds sealed over, containing white honey, should be taken off before buckwheat honey was stored in them at the beginning of that yield, as partly capped boxes of white honey would bring more than when finished with dark honey. But I think I hear some one say, "If I take off honey before all the cells are sealed, it is liable to sweat and become sour." This is because the honey is kept in an improper place, such as a cellar or other cool damp place, where the best of honey will deteriorate in time, and become unfit for food. All honey should be stored in a dry airy room, which can be kept at a temperature of about 90° all the time, and in such a place the honey will be growing better all the while, whether sealed or unsealed. In this way it soon becomes so thick that the honey in these unsealed cells will not run out in crating; and if tipped over, not a drop will be found to daub the rest, which daubing is always spoken of as the reason why honey that is unsealed should not be removed from the hives. Thus I would always advise leaving honey on the hives till it is sealed, with the exception of times when other honey of an inferior nature is likely to be stored with it.



POLICY OF GLEANINGS ON TWO POINTS INDORSED.

Allow me to congratulate GLEANINGS on adopting two things as I urged. The first is raising queen-cells in full colonies. In the second, you are all right so far as you go, but you do not go far enough—that is, burning the foul-brood hives, combs, and frames. You except the bees. No, sir. Burn *every* thing as you would poison ivy or smallpox rags. Then publish what you did, as a moral influence with others. When you find it within "7 miles," or 10 either, of you, urge the owner to burn the whole business after dark when every bee has been smoked in and fastened in. Don't waste time and brains arguing with us that the queen or bees will not infect other combs. Burn all.

If the owner lacks public spirit, or is too mean or shiftless to do it, then trade him a colony of equal description and weight from your own yard, then after dark smoke the bees of

his infected colony; carry it to one side, and make a bonfire of it.

The diamond-shape trouble in sections in T super can be avoided by using another set of T tins at the top of the sections—that is, two sets of T tins for each T super.

Ingram, Pa., July 3. PHILo S. DILWORTH.

[Friend D., I entirely agree with you in your policy regarding foul brood. Ernest might not think exactly as I do, however; but after watching the thing for a good many years, I think I should sleep better to know that every thing pertaining to the business was thoroughly burned up.—A. I. R.]

ZINC TAGS.

We use zinc tags and write on them with a common lead-pencil. When we wish, after using these zinc tags, to clean them so that we can use them again, we use diluted hydrochloric and muriatic acid. The lead-pencil writing on zinc (old zinc is best) appears to be indelible.

Syracuse, Kan., Aug. 5.

Z. T. B.

NUMBERING HIVES AND LABELING TREES ; CORRODED ZINC TAGS.

While you are discussing number-tags for hives, perhaps some of your readers would like my way, which is, to paint the numbers in large figures on the hives, using black paint. Sometimes it is quite a convenience to be able to read the number several rods away. Or if a tag is preferred, a good one can be made of a small square of old zinc; if slightly corroded, so much the better. Write what you wish on this with a black lead-pencil. I use a carpenter's pencil, which makes a wide mark, though the writing will remain legible for years if done with a fine-pointed pencil. These, tacked to stakes, are used by nurserymen to mark rows of trees.

By the way, I have used with much satisfaction a tree-label of the same material, which I saw illustrated in the *American Agriculturist* many years ago. The zinc is cut into a long triangle, an inch or more wide at one end, and eight or ten inches long, with the name on it thus:

BALDWIN.

The small end is then wound three or four times around a twig. It will not bind the twig so as to injure it, as it unwinds with the growth of the tree, and it retains its place until removed purposely.

BURDETT HASSETT.

Reliance, Va., Aug. 27.

BEES IN A COFFIN, IN CHINA.

After I had seen bees in a table-drawer, in a box bed, under a counter, and under the floor of a Mohammedan mosque which is to be found here in Shaowu, I thought the possibilities had been pretty well nigh exhausted. But one day

I went up to a mountain village to visit a Christian. His father and mother were very aged, and, after the common custom of the land, he had their coffins all ready, finished up and varnished over nicely, in a shed adjoining his house. The cover of each coffin rested loosely on it; and a swarm of bees, finding a place large enough at the edge of one of the covers, had taken possession of the coffin.

This part of China abounds in woods and trees, yet I have never, but once, seen a swarm of bees in a hollow tree. That one exception was in an immense camphor-tree which stood just at the entrance of a village. Chinese bees seem to be almost as much domesticated as cats or dogs. They have no special attachment to any particular place or person; and if their hive becomes infested with moths, or in any way unacceptable to them, they abscond; but, so far as I have observed, they always locate in or near some human habitation. Buddhism makes a Chinaman loath to take the life of any thing not hurtful; and the coming of a swarm of bees to a house is considered a lucky event, bringing good luck. The operation of these two causes has made human habitations the safest place for bees for ages past, and the consequence seems to be a domesticated race of bees.

In this climate, where frosts are rare and severe freezes are unknown, we build our houses with a double wall made of lath and plaster, one on the inside, the other on the outside. This leaves an empty space, about six inches wide, between the two faces. One of our houses here is just now unoccupied, the family being away for the summer. A few days ago a swarm of bees, finding a crack between the mop-board and the floor of the veranda, located themselves between the walls of the house. This is another instance of the propensity of Chinese bees to locate themselves in human dwellings.

Shaowu, China, June 4. J. E. WALKER.

FAX.

Best time fer spreadin' brood is—after the brood has hatched.

Bees kin be united without enny fightin'—in the pupa stage.

Good queens will sometimes lay more eggs in the spring of the year'n the bees kin kiver.

If a feller knowed all about the hunny-bee he'd have to know all about God himself, and that is impossible.

I'd ruther be in it every yeer with a few good colonies well taken keer of than to be out of it half the time with a hull gee-raft.

I make my supers hump themselves so as to hold 32 sections, and, after keerful testin', I have found that a helthy kolony will komplete that menny jist as quick as they will 24.

Baitin' supers is like feedin' katnip tea to young infants—it may not do enny harm, but does it axually do enny good?

By way of 'periment, sirup made of granulated sugar wuz fed thick enuff to harden before the bees kapped it over, and the kolony pulled through the winter, owin' to the moisture in the atmosfeer, I s'pose.

Hybrid bees kin hear when they are tryin' to git at you through your veil, as the follerin' 'periment proves: Set your teeth together and give the grand hailin' sign of a bee in distress by imitatin' the sound a hunny-bee makes when pinched, and thay will redouble their efforts to sting you. Try it.

If bees hain't protected frum heat, comb built on wired foundashun will sag in two or three seezins' use until drones will be razed along the top-bar. It's a fax.

Durin' apple-bloom, queen-cells wnz started; and then several days after, when they orter o' knowed better, with hardly enny hunny left, and none comin' in, the bees k'menced throwin' off swarms—which is a proof that the presence of queen-cells is a powerful cause of swarmin'.

FATE.

See me, see me as I rush
To the lightin' board, and brush
Off my coat of yellow plush,
Ready fer a romp and play
Round the apiary to-day !
I'm a dandy, so thay say,
And for beauty stand alone
'Mongst the bees—and I must own
Up that I'm a *hand-picked drone* !
But, alas ! the farmer's hen
Happened 'round that way jist then—
She belonged to the Shanghigh
Breed; and when she got her eye
On that drone she nabbed him by
His plush collar, and in two
Seconds he wuz gone frum view
In a happy "hum, sweet hum,"
Whare all bees must go to sum
Sweet day; and now he must own
Up that he's a *hen-pecked drone* !

Alexandria, Ind.

ELLERY KRUM.

Bees have not done much for three years until the last two weeks. Now they are booming. It's from second growth of white clover, Japanese buckwheat or corn, or altogether. Prospect is good for fall honey. We have had abundant rains.

THOMAS SHEPHERD.

Barry, Ill., Aug. 9.

Bees have done well this season. I have 3000 lbs. from 40 colonies, spring count, and 25 swarms. There are good prospects for 100 lbs. per colony, spring count. I am selling the honey at 10c per lb. This honey is all extracted, and fine quality.

W.M. MALONE.

Newbern, Iowa, Aug. 22.

COMMON SWAMP MILKWEED—ASCLEPIAS INCARNATA.

I mail you a flower to be named. It is becoming more plentiful here in my vicinity, and

is an A No. 1 bee-plant. I think it belongs to the milkweed family. Last year I got considerable surplus from it. The color is very light amber, and a peculiar spicy flavor not similar to any other honey I am familiar with. Here it blooms from July 1 to Sept. 1; and were it plentiful enough I would not exchange it for any honey-giving plant that grows here. Give me the proper and common name if you can.

Belleville, Ill., Aug. 20. E. T. FLANAGAN.

[The specimen, as nearly as we can identify it, is known as common swamp milkweed, *Asclepias incarnata*.—Ed.]



THE Kansas Bee-keeper is growing better as it grows older. It has had a good start as a youngster, only nine issues old.

ALTHOUGH this is supposed to be the dullest part of the year, we are full of business. Verily, the goods that go out from the Home of the Honey-bees are doing their own advertising.

SOME of the convention notes and comments will be found in A. I. R.'s talks in this issue. Others will be given by J. T. Calvert, in this department.

OUR newly equipped factory is being put in running order as rapidly as possible. A good many machines are now started, and we shall have all of them in full blast by the first of October.

THE frequent rains, and the abundance of fall flowers, especially of the great family of asters, give great promise of a fall flow of honey. Indeed, it is already coming into our hives now. Buckwheat is also doing well.

WE are again printing an extra number of copies as usual, and, for any thing we can see, shall have to do so for several numbers to come. Advertisers should not fail to take advantage of this extra circulation, for we charge no more for the space, although we add one-half to the regular number printed.

THE representative bee-women, including Mrs. L. Harrison, Mrs. Axtell, Miss Wilson, Mrs. Sherman, and Mrs. Heater, are shown up in half-tone on the first page of the *American Bee Journal*. It is a pity that so many of our representative women refuse to let us have their photos. Indeed, as it was, Bro. York, if I am not mistaken, had to take some of them by surprise.

A VERY pretty sight in front of our factory building is the merry humming of hundreds of bees on a couple of beautiful beds of portulacas. If we had acres of this, instead of ragweeds and other noxious weeds that do nobody any good, what might we have in the way of honey? If you haven't a bed of portulacas, better have one by another year.

QUITE a number of specimens of fall honey-plants are now being sent in to us for identification. Some of them have been forwarded, the sender asking if they were alfalfa. I could not imagine why there should be such ignorance regarding this plant until I looked the matter up. I then found there had never been a decent engraving made of this celebrated plant — at least, I had never seen one. The A B C of Bee Culture has one copied after a picture in a seed catalog, which was itself poor in the first place. I should be glad if our readers would refer us to a good engraving, or send us good specimens when the plants are in full bloom. I am determined that, by another year, there shall be a good picture, so that all may know when they see the plants, without calling in the services of a botanist.

FATHER LANGSTROTH AGAIN AT THE FOREFRONT.

ONE of the notable features of the last convention of the North American at Toronto was the presence of that veteran of all bee-veterans of the New World, father Langstroth, the one man of all the world who gave bee-keeping its first real important start. Although he has been an invalid all his life, he still survives his 85th year. Indeed, his health has so far improved that he has resumed his pen. We already have one article from him, and the same will appear in our next issue. He hopes, health permitting, to finish up his interesting Reminiscences that were begun October 15th, 1892, and which, owing to the recurrence of his old head trouble, had to be discontinued in the May 1st issue of the next year. These Reminiscences were exceedingly interesting, and it was a great disappointment to us all that it should seem necessary to drop them when it seemed probable that, owing to his advanced age and ill health, they would never be completed. Mr. Langstroth is now at work upon them again; and, if all goes well, the hopes of his latter years will at last be realized.

BEES AND COUNTY FAIRS, AGAIN.

OUR older readers will remember that we had trouble in times past by our bees helping themselves at the candy-stands while our county fairs have been in session from year to year, within a quarter of a mile of us. For the last two years you will remember we have drugged the bees with tobacco smoke, and cautioned the candy-men to kill the first few bees that

came around, and that they were not to let one of them get away with a load to bring back ten more. You will remember how well the scheme has worked. But this year our county fair was visited by some copious rains, and we therefore relaxed our usual vigilance in our apiary, thinking that the frequent rains would keep the bees in. It did, of course; but the sunshine came out at one time, and I went through the apiary to see what they were doing. I soon made up my mind that they were flying a little too briskly in the direction of the fairground to be engaged in legitimate business. I told our man to be on the lookout, and in the mean time I would go over to the fair. Sure enough, the bees were having a "perfect pow-wow" on broken watermelons. They had got started, and now the question, could we stop the mischief-workers at this stage of the proceedings? I hastily made my way back to the apiary, and both of us—the apiarist and I—began tobacco-smoking the strong colonies, first at the entrances, especially at those entrances where the bees were flying heaviest, and, presto! the flying ceased. After having gone over the whole yard, including the nuclei, I noticed that there were but very few bees flying. Again we went over the yard, this time to smudge the bees that had returned, and then I went back to the fair. It is almost unnecessary to say that there was a decided "let-up" on the part of the bees at the candy-stands and places where watermelons were sold by the slice.

You see, the tobacco drugged them; and as it takes them two or three hours to get over the effects, another smudging would last them nearly all day. The whole point of this is here: There will be more fairs yet in other places; and bee-keepers should take the hint in time, because they can not afford to have their bees declared a nuisance, or get into trouble with the "fair" people of our land.

MORE ABOUT THAT SALISBURY BEEF-DIET CURE —ITS EFFECT ON E. R. R.

I HAD fully matured my plans to be present at the Toronto convention, now a thing of the past; but a "temporary setback" in health at the time of going made it seem at the last minute inadvisable to leave home. A rigid following of the doctor's orders, and a strict adherence to the diet as explained in our previous issue, has brought me around all right. Indeed, I haven't felt so well in years.

As a good many have inquired after my health of late, being surprised that I had been "down" at all, I will say, for the benefit of those who may have been ailing like myself, and for those kind friends who have shown such friendly solicitude, that the Salisbury beef-diet cure is really performing wonders. Before I go further I want to say that this is no paid puff; so, keep that before you.

For several years back I have had indigestion,

chills, frequent attacks of grip, violent sneezing-spells—so violent, indeed, that I was seriously afraid of bursting a blood-vessel or something of that kind. In addition I found a growing incapacity for office work; dull headaches, accompanied by insomnia. Nervousness? oh, dear! I could have kicked the cat—any thing and every thing to relieve my pent-up feelings. Of course, I was on the verge of nervous prostration; and another one of those attacks of "la grippe," I believed, would finish me. Last winter, and this spring and early summer, the symptoms were worse. Bicycle-riding—that which had years before seemed to relieve me—was unavailing now; in fact, I hadn't strength enough to ride.

Now all this is changed. While I haven't recovered yet by considerable, it is evident that I am gaining rapidly. I sleep beautifully nights—that quiet, restful sleep that I haven't known for months; chills have all disappeared, and so have the sneezing-spells. Indeed, these last two disappeared in about two weeks' time from the beginning of that diet that means total abstinence with a vengeance, from every thing, almost, save ground lean meat. My normal strength and endurance are far from back, but are coming so rapidly that I have no fears but that they will have fully returned, and more.

Formerly when I ate my meals, even though I ate to the fill, I was not satisfied. I was starving to death with plenty to eat. Now I sit down to the table, and, even though my rations are limited, what I do eat *nourishes*, and gives strength; in short, I rise from the table now well and *sufficiently* fed.

Now, dear reader, if you are ailing as I have been, don't try to go on to this treatment alone without the advice of Dr. Salisbury, of New York, or Dr. Lewis, of Cleveland. I consult Dr. J. M. Lewis, 176 Euclid Ave., Cleveland. He has, under my own eyes, performed some remarkable cures—yes, saved even consumptives in the last stages.

In conclusion, let me say that neither Dr. Lewis nor Dr. Salisbury pays us one cent for this notice; and, indeed, we wouldn't take it from them, even if proffered, for they are not of the quack kind who seek notoriety through "great big puff ads." This statement, as was also the previous one by A. I. R., in the Sept. 1 issue, was written without their knowledge or consent. Our only motive is to help our fellowmen through the slough of despond, on to that plane—good health.

CAN QUEENS TRANSMIT FOUL BROOD?

R. L. Taylor, in the *Review* for September, while admitting that it may be possible for a queen from a foul-broody colony to transmit the disease to a healthy colony to which she may be introduced, rather doubts it. He took a queen from a colony badly diseased, and gave her to a healthy one, and this colony has pros-

pered through the season, and is perfectly healthy. A few years ago, when the disease raged with us so badly, I took at different times queens from a dozen badly affected stocks, and gave them to healthy ones. These remained healthy in every case. Of course, one swallow does not make a summer, nor do a dozen such swallows. But in all my reading on things apicultural, I do not know of one real good authentic case proving that a queen ever did carry the disease. The principal ground for belief in such transmission seems to be based on what Cheshire saw, or *thinks* he saw, as *Bacillus alvei* (foul-brood germs) in the ovary of the queen. In the first place, microbes are so numerous, and diverse in their character, that even the best of scientists are liable to be deceived; in the second place, even if the bacilli were actually there it does not follow that they would enter into the larvæ. All the facts and indications seem to show that Cheshire was mistaken. Where practice is at variance with theory, or, if you please, science, we will take practice every time.

THE ACTION OF THE N. A. B. K. A. REGARDING AMALGAMATION.

FROM the action taken at Toronto, the amalgamation of the North American Bee-keepers' Association with the National Bee-keepers' Union is all but a foregone conclusion. After discussing the matter pro and con, those who seemed to be opposed to the union of the two, and those who favored it, were very near together. The suggestion of Dr. Mason, in the September *Review*, was in large measure followed, except that the committee appointed to consider the matter, instead of waiting till the next annual meeting of the N. A. B. K. A. to report, is expected to complete its work within a month. It is then to report through the bee-papers, submit its findings to a vote of the members of the N. A. B. K. A., and also to the members of the Bee-keepers' Union, along with its next annual report. If accepted, the amalgamation is effected, and thereafter only one organization will exist in place of the two. The proposed name of the united organization is the North American Bee-keepers' Union. It is proposed to continue the office of the General Manager, elect a president, secretary, and treasurer, and board of directors, voting to be by mail, giving all members a vote, whether present at annual conventions or not. The defense fund of the Union is not to be impaired. One dollar, or whatever fee may be deemed advisable, will entitle any one to the full benefits and privileges of membership in the united organization, instead of one dollar in each, as at present. The benefits and advantages will be greatly increased, and at a less cost; and every bee-keeper in the land, who owns any considerable number of colonies, if it be not over a dozen, can not afford not to be a member.

The committee appointed were Thos. G. Newmann, for chairman, and Dr. A. B. Mason, R. F. Holtermann, and J. T. Calvert, and three others whose names I do not now recall.

THE practice of circulating special circulars and dodgers, as was done at the last meeting of the N. A. B. K. A. during its sessions, was not very creditable to the writers of such matter, or considerate to those in attendance, especially the persons who happened to have the floor at the time. If the pet notions and supposed grievances of the writers of these circulars can not be brought to the attention of bee-keepers in any other way, it were better that they remain in oblivion. Such practices were condemned at the time, and always should be. We refer to the distribution of the pamphlet entitled "Bees," attacking Geo. W. York and others, by Frank Benton, and a dodger advertising a booklet by W. F. Clarke, defending sugar-honey production, and attacking Ontario's foul-brood inspector, Wm. McEvoy.

G. M. DOOLITTLE's genial face and eloquent words on some things of interest to bee-keepers were a treat indeed. The address deserved a larger hearing. His first plea was for more brotherly love, less desire for honor and self-aggrandizement, more willingness to impart, for the common good, valuable ideas gained in our own experience. "Freely ye have received, freely give." Along the line of honey adulteration he believed that more work (detective work if need be) and less talk would accomplish a great deal more. At present, though a great deal has been said, practically nothing has been accomplished to stop adulteration. Here is work which the Union ought to take up. If a few examples were made in convicting and punishing adulterators they would be more careful.

ONTARIO bee-keepers are to be congratulated for the strong and able allies they have in Hon. John Dryden, Minister of Agriculture, and Jas. Mills, President Ontario Agricultural College. Their able addresses at Toronto showed their deep interest in our chosen pursuit, and pledged co-operation as they have given it in the past. With such friends in high station it becomes an easier matter to obtain government grants to help make an organization of bee-keepers valuable.

THE paper by Allen Pringle on the mistakes of bee-keepers and bee-papers was a most excellent one, brim full of good points. To be sure, we could not all agree to all of the mistakes, but it would be strange indeed if no mistakes were made in treating such a theme.

THERE is some hope of the early publication of the report of the St. Joe convention if Mr. Benton carries out his pledge to the convention at Toronto.

THE TORONTO CONVENTION.

HOW I CAME TO GO.

"Doctor, do you mean to say your treatment will cure *all* kinds of chills, grip, hay fever, etc., in the short period of time that you have cured me?"

"Oh, no! certainly not."

"Well, then, how did you dare tell me that you would have my overcoat and trappings off, and have me clear of my chills, neuralgia, toothache, etc., and say I could stand the north wind, all inside of ten days?"

"Simply because I saw at once that you had no organic trouble. Your organism is all sound."

"Well, then, why can't I have a little rice or dry bread, such as you give Ernest and your other patients, to go with their meat? I am all cured of the chills, and what more do I need?"

"Because the chills, etc., were a secondary matter—a trifle compared to the real trouble and cause. We want to hold you down to the clean lean meat until you get over all tendency toward the chronic dysentery which has been getting a pretty fast hold on you of late. This tendency to constipation we are battling with is a part of it. We want to get this straightened out so your bowels will move regularly of themselves every day, or, at the furthest, every other day; then we can safely let you have a little variety with your meat."

"But, doctor, won't a sparing diet—that is, just a little of other kinds of food, so the patient can eat just what would be digested thoroughly, and no more—answer as well as, or almost as well as, this exclusively meat diet?"

"Being careful not to overeat, and eating just enough and no more, is a very important part of the treatment; but it is not all of it by any means. Lean meat as a diet has a special value. Other people have found this out, and it has been recognized for years. Your prize-fighters are trained on a beef diet; so with runners and the boat-rowers, the wheel-riders, and the base-ball players. They are cut off from tobacco, coffee, beer, and drink only pure water, as you do. They are also kept on lean meat until all useless weight is cut down. You see, we are really training you to be an expert wheel-rider. You have got your weight down from 135 to, say, 115; and pretty soon what you have left will be just the purest kind of muscle."

After I got home that evening I was thinking of it; and as I had been very busy during the day I got out my wheel by moonlight. Let me explain here that the doctor rather objected to having either myself or Ernest attend the convention. He said it would throw us out of our "training," and would interrupt the rations and hot water, and probably be quite a little setback to our progress; and Ernest decided finally that he could not stand the trip. It seemed to me, however, that at least one of us certainly *ought* to go. I sprang on my wheel, and started off by moonlight. The wheel seemed lighter than it had ever been before. The further I went, the lighter and prettier it seemed to run; and I soliloquized that, not only had I a feather-weight wheel, but, without knowing it, I had been almost unconsciously getting to be a feather-weight rider as well. God, in his infinite wisdom and mercy, had been opening up to me new and unexpected revelations. The air was just cool enough to make it exhilarating. As I covered mile after mile, up hill and down, my spirits rose—aye, and strength too; and I resolved then and there that I would go to the convention and show the doctor that

I could hold fast to my meat diet and hot water, and my new strength also, at one and the same time.

Before taking the boat in Cleveland I called on the doctor and told him what I wished to do, and he gave me directions; and to make sure of getting my needed rations I carried with me one ration ahead, to be eaten cold, if I could not do any better.

While sitting on the deck of the steamer enjoying the cool north wind with the rest of the passengers, some one remarked this was the night of the eclipse; and, sure enough, there was the moon shining down upon us in all her fullness, brilliancy, and loveliness. I knew that regular rest and sleep were as important as almost any thing else; but I had an old boyish longing to see that astronomical program carried out. On board the boat I secured a splendid tenderloin steak, and enough for a good full ration too. Then I took a nap, calculating to awake in time to see the eclipse start. I hit it almost to a dot; but thinking it would not do for me to watch it very long. I slipped out of my stateroom barefooted. I detected the commencement of the shadow before any of the rest of the passengers, and became so absorbed in it that I stood out there barefooted in my shirt sleeves, notwithstanding the northeast wind (so much dreaded but a few weeks ago), and watched until the shadow completely covered the face of the moon. Then I went to bed satisfied—no chills, no toothache, no inconvenience. By the way, it was wonderfully interesting to see the host of stars, mostly invisible while the moon was out in full, come out one after another until the total eclipse. Then we had a brilliant starry night.

Notwithstanding the inroads made on my sleep, I slept so soundly that, before sunrise, I was up and dressed, and enjoyed one of the most brilliant spectacles of colored clouds, just before the sun came up, that I ever saw in this climate or any other. Another tenderloin steak on the boat in the morning fixed me for the forenoon. The hot water was furnished me free, with the utmost good nature, when I made a little explanation. Although I offered pay, none was taken. They said on the boat that, if a man took a notion to drink hot water, and nothing stronger, he ought to be encouraged by having it furnished free, even if he did drink cupful after cupful.*

* By the way, there is something wonderful in the way the patient relishes and enjoys his hot water after he has been three or four weeks on the meat diet. For many years I have been much in the habit, especially while riding the wheel, of drinking soda-water, ice-cream soda, and such like temperance drinks; and when the doctor told me these would have to be entirely cut off, I thought it was going to be considerable of a privation; but now when I saw all sorts of soda-fountains on the steamer, and iced drinks of every sort all around the Falls, I had no longing at all for any of them. In fact, above all the delicious drinks that art and skill have been able to manufacture, and you may, if you please, include all kinds of beer and intoxicating drinks, I could honestly prefer my pure hot water to each and every one of them. Ernest has repeatedly said the same thing. Why, here is something truly marvelous. Even the Keeley gold cure can not compare with it. Suppose you could have a company of people—a band of men, if you choose, for men are most addicted to expensive and costly drinks—suppose we had a band of men in our land who actually *prefer* pure water to any thing else the world can furnish; what would be the result?

Meekness, temperance; against such there is no law.—GAL. 5:23.

And the bright and encouraging feature of it is, that I think almost any one—no matter how depraved his appetite may have become—can be, by such a course of diet as I have mapped out, led to

Close to the depot at Niagara Falls is a temperance hotel. I have often been told in traveling, that temperance hotels never furnish as good accommodations as the other kind. I know this temperance hotel at Niagara Falls is not that way. They gave me a place to lie down and take my nap, and then as much beef-steak as they give four or five ordinary guests, and charged me just the same as the rest of the crowd—40 cents for dinner. The place is neat, clean, and comfortable, and the managers are courteous and obliging.

As we had but little time at the Falls, a carriage was hired to take our crowd—Mr. Calvert, Constance, and Carrie. The children were greatly afraid I would tire myself out, even though I reminded them again and again that I was training for a racer or a wheel-rider, and I enjoyed the fun of running and jumping, up stairs and down, and getting ahead of them. You see I am light as well as strong. When we got on the islands of the Three Sisters I remembered my corns, for it was a pretty hot day, and I was taken with a great desire to wade in the rapids above the falls. To my surprise, however, they loudly protested, declaring I would fall down on the slippery rocks, and get washed over the great cataract, like ever so many other people from time immemorial, by their thoughtless folly. I was inclined to resent the imputation that the rapids could wash down a live Root who had his wits about him—espe-

cially the father of the Roots then present. I heeded not their protests, but climbed down to the water's edge, tossing my shoes and stockings back at their feet to keep as mementoes if I got washed away. The folks on shore made such a fuss, however, I was really obliged to wade out of the water (which, by the way, was hardly knee-deep) and come ashore and forego my delicious pastime; but I felt as I can imagine a young duck does that has been hatched under a hen, and I told them I was coming some other time when they were not along, so I could have the fun of wading in Niagara Falls rapids to my heart's content.

John and I paid half a dollar for a water-proof suit to go down under the falls; but the girls thought they would stay on top. I did not feel satisfied to go out under the falls as far as the walk and railing extended. The guide said I could climb out on the rocks a little further if I wanted to. They guaranteed their water-proof clothing to keep us perfectly dry, so I walked out to the place where I could get right under a part of the fall. The wind swayed the broken-up spray one way and the other, so occasionally it would come all over me like a deluge. Once in a while the torrent was so great as to make me gasp for breath; but through it all there was a most delicious sensation (for it was a rather hot day) that for a time seemed strangely familiar. Finally I recalled that wheel-ride in the dark, when I passed through a foggy swamp where the air was so laden with vapor that it gave a delicious sensation like drinking water in filling the lungs with the damp water-laden air. Now, I have never heard this mentioned before; but I believe it is not only delicious but wholesome, during hot dusty weather, to wash out the lungs by breathing air so heavily laden with watery spray as to make you pant a little at times for breath. After I had enjoyed this until Mr. Calvert reminded me we would have to hurry back to the carriage, which was hired for only a limited time, I decided I could not go back without getting a better chance to kneel at the very foot of the great cataract. I saw a place where I could climb down through the rocks, and get clear into that boiling, hissing foam of mighty roaring waters. One little spot there seemed to be, right at the very foot of it all, where I could sit down and let the surging billows rush and roar up to my very feet. I got almost down there—in fact, one minute more and I should have been in the coveted retreat. Just as I was ready to slide down, however, there was a change in the program, and great waves of snowy, misty spray covered the spot entirely, and rolled up to my very feet. I am sure there would have been no danger of being washed into the boiling caldron: but the girls would certainly have had more cause for alarm had they been around just then. Now, why don't they have some iron rods for inquisitive Yankees to hang on to? or why don't they provide even a loose robe, so that people may safely dip into these delicious and entrancing waters, if they choose to? Why, to me the greatest charm of Niagara is to get right into the foam and suds, and be really a part of it.

prefer and enjoy pure water to any other beverage the world can afford.

No doubt much of the intemperance in intoxicating liquors as well as other intemperate eating and drinking, is caused by disordered digestion. The patient is restless and uneasy, and craves this, that, and the other; drinks soda-water, Hires' root-beer, etc., in the vain hope that it may hit his trouble and make him feel better. Give us a natural, healthy digestion, and pure water, when thirsty, and it satisfies better than any thing else that has been invented. Is it not so?

From the "Yearbook of the United States Department of Agriculture" for 1894 I quote the following:

"I have come to the conclusion that more than half the disease which embitters the middle and latter part of life is due to avoidable errors in diet. * * * and that more mischief in the form of actual disease, of impaired vigor, and of shortened life accrues to civilized man * * * in England and throughout Central Europe from erroneous habits of eating than from the habitual use of alcoholic drink, considering as I know that evil to be."—Sir HENRY THOMPSON.

And from the same book I quote from an article written by W. O. Atwater, Ph. D., the following:

We consume relatively too much of the fuel ingredients of food—those which are burned in the body, and yield heat and muscular power. Such are the fats of meat and butter the starch which makes up the larger part of the nutritive material of flour, potatoes, and sugar of which such enormous quantities are eaten in the United States. Conversely, we have relatively too little of the protein or flesh-forming substances, like the lean of meat and fish and the gluten of wheat, which make muscle and sinew, and which are the basis of blood, bone, and brain.

Another most important fact stares us in the face right here. You know something of the trouble I have had in finding water I could drink with safety when traveling, especially after drinking from different wells and springs in different localities. Well, on this Toronto trip I drank water from many different sources, from wells having water strongly impregnated with different chemicals; but the water, before being used, was first made boiling hot, then cooled, a little at a time, in a saucer; in this way I could drink a pint, or even more, without any harm whatever. I tried this so many times I think there can be no mistake. Boiling any water for drinking-purposes answers a twofold purpose—it effectually kills organic matter or vegetable life in the water, and changes or precipitates, at least to some extent, what chemicals there are in solution. Still further, a patient suffering with summer complaint, who can not drink cold water or water at ordinary temperatures, can drink water, as hot as the mouth can bear, as a general rule, without any distressing symptoms.

I hate to find fault; but there is quite a little bit of humbug about the way the ticket-vendors advertise these places. The "light water-proof clothing" they tell about is a pretty good load for a man to carry, let alone advising women to go down there. And the "intelligent guide" who takes you around, and "explains" every thing, is a stupid, dirty fellow, smoking a pipe. He never volunteers a word unless you ask him a question; and then he seems to begrudge the time it takes to keep the

pipe out of his mouth while he answers in monosyllables. (This, too, on the *Canada* side.)

The great project of making Niagara Falls a water-power to move the wheels of the world is already in operation. Away up above the rapids, where I disturbed the children by wading in, a shaft has been sunk, hundreds of feet deep, so as to take the water from the *highest* point in Niagara River. A tunnel that has its opening near Suspension Bridge runs back into the rock about a mile, connecting with this shaft, utilizing the force of this water from its highest point, and letting it out at its very *lowest* point. This tremendous power is utilized by means of the latest and most improved turbine water-wheels; and these wheels move dynamos, and the great volume of electricity thus produced is carried by wire cables miles and miles, furnishing power wherever needed, and in quantity almost unlimited; and one of the beautiful things that this electric current is just now doing is propelling the cars of an electric railway down the gorge from the suspension bridge, through Whirlpool Rapids, Devil's Hole, and ever so many other points of interest, clear to Lewiston, on Lake Ontario. Although our tickets from Cleveland to Toronto covered this part of the trip, we cheerfully paid the small sum of 25 cents to ride down in the new street-cars on the Gorge Railway. Let me briefly explain: Lake Superior is considerably higher than Lake Huron, into which it empties; Lake Huron, in turn, is higher than Lake Erie, just below, and Lake Erie is several hundred feet higher than Lake Ontario, the fall in one place between the two lakes being 160 feet sheer perpendicular, constituting what is known as Niagara Falls.

We took this gorge railway and descended by the electric elevator 230 feet down the cliff. But even when we had reached the bottom we found Niagara River just roaring and raring as it pitches headlong still further down into this rocky gorge with the cliffs more than 200 feet high on each side. It goes down hill in this headlong way for all of a mile, and this makes the wonderful gorge. The new railway, just completed, is cut in the side of the rock at times almost down to the water's edge. Mr. Calvert asked one of the managers how long that project had been in operation. The reply gave me a quick start of pain. He said:

"We made our first trip just two weeks ago last Sunday."

I have not the full particulars; but as soon as I spoke I remembered hearing of a terrible accident, resulting in the loss of life, about the time they opened this new railway. God has given us this wonderful new force, electricity. He has given us the new means of rapid travel by these beautiful and unique electric railways. Is it really true that the United States of America is getting into a fashion of celebrating each new gift from the great God above by trampling upon and desecrating his holy Sabbath? They start new street-railways on Sunday; and when our American boys and girls want to demonstrate what may be done with this other new gift right from the great Father above, the modern wheel, they pick out God's holy day on which to demonstrate that they can ride a hundred miles between sunrise and sunset. This country professes to be a Christian nation; yet right over the line, in the city of Toronto, a great city of about 200,000 inhabitants, not an electric car or any other kind of street-car moves a wheel on Sunday. I asked some of the people how they managed to go to church without the aid of street-cars. You know folks in the large cities here in the States claim that the cars are an absolute

necessity for the people to go to church. Well, one of the Toronto friends replied something as follows:

"Mr. Root, if you will consent to remain over Sunday with us I think I can show you that a greater proportion of the people of Toronto attend church regularly than in almost any other city you can find of its size in the world."

While in Buffalo I unexpectedly ran across our big good-natured friend Dr. Mason; and he was, as he always has been, a great part of the life of our convention. J. B. Hall, of Woodstock, Ontario, kept up his reputation, not only as a successful thorough-going bee-keeper, but he has not forgotten his comicalities and dry jokes. He said that the next time I wanted a milder climate than that of Ohio to spend the winter in, I should come up and live in Canada. He said they would send me back with plump and rosy cheeks, something after the fashion of my son-in-law, Mr. Calvert, and the rest of them who were brought up in Canada.* Father Langstroth, with his accomplished daughter, Mrs. Cowan, was present, I believe, during all the sessions. T. G. Newman; W. F. Clarke; R. H. McKnight; Hutchinson, of the *Review*; York, of the *American Bee Journal*; Holtermann, of the *Canadian Bee Journal*, and Frank Benton, from Washington, were all present; and the greater part of our deliberations were characterized by brotherly feeling and brotherly bearing. Once or twice, when I was not present, somebody said there was a little jangle. Matters that did not seem to settle themselves quickly were very soon referred to a committee, so that comparatively little time was wasted in unimportant matters. Father Langstroth gave us a history of the difficulties attending the landing of the first Italian bees on American shores, about the year 1859. Mr. Parsons, the celebrated florist and rose-grower, made about the first successful shipment. But he was no bee-keeper; and after he got his bees here safe and sound he was so very careful and kind (?) to them that he first put them into a greenhouse. After the greater part of them had buzzed their lives out by bumping against the glass he put them outdoors in an antiquated bee-shed; but somebody told him they would surely go off and get lost unless he shut them in. So he covered the bee-shed with mosquito-netting. And this was a time when cherry-trees, apples, and pears were all in full bloom, and the common black bees just reveling in the blossoms. The poor Italians were kept inside by the cruel netting. After the six colonies were almost used up he sent for his old friend L. L. Langstroth to come and try his hand at saving them. They had been feeding them honey inside of the netting. The poor bees were daubed up, discouraged, and many of them dead; and, after doing his very best, friend Langstroth saved just a single queen. Somebody from California wanted the Italians so bad that he actually offered \$500 in gold for the single surviving queen; but Parsons

* In his talk about wintering bees in the cellar (for I believe cellar wintering seems to be best during the long severe Canadian winters) he spoke of the contented hum that should tell the bee-keeper when every thing is just right; and even when he was talking—at least so it seemed to me—a cheerful, gentle hum began to diffuse itself throughout the whole large room in which the convention was held. I thought at first it must be an accident; then I stared at our friend, and wondered if it were possible that he was a ventriloquist as well as humorist. There was no mistake about it. The well-known buzz that seemed to be here, there, and everywhere, instead of emanating from any particular point, must have been the result of a ventriloquial effort on the part of our comical and irresistibly quaint veteran, J. B. Hall.

would not let her go. Then there was a craze for more importations, and others finally succeeded. It was not very long after this time that I got the bee-fever, or the Italian-bee fever, as you may remember from the introductory pages of the A B C book, and I paid \$20.00 for my first Italian queen, and it was a good investment.

T. G. Newman presented the matter of the Bee-keepers' Union. I will explain to our readers who are not familiar with this organization, that a certain number of bee-keepers throughout the United States and Canada club together and pay \$1.00 a year for the purpose of keeping a reserve fund for employing legal talent when any individual or town, or any locality, takes it into its head that bee-keepers have not the right to live and do business. Of late years the Union has succeeded in settling most cases of litigation by simply showing its record in the past, and letting the world know that it has a reserve fund that may be used to employ the best legal talent to defend our rights. Of course, this money is expended only for the protection of its members.

For years back, most readers of the bee-journals have enjoyed the writings and the instruction given us regularly by our good friend Doolittle. In fact, his is almost a household name in every family where a bee-journal is taken; but I never knew until now that friend Doolittle was an orator as well as a writer. And I want to whisper to the friends in his vicinity, that, in case the minister should be absent on a vacation or otherwise, friend Doolittle is abundantly able to give them an excellent sermon, fit for Sunday or any other day. I want to repeat just one little story he gave us, because it contains an excellent moral:

When Henry Clay got to be something of a public man, on a certain time it became very desirable that he should have the friendly services of one who had in days gone by been an old schoolmate. This friend, however, had been put out by something not according to his ideas of justice and right. He flatly refused to give Mr. Clay any aid or encouragement. The great orator plead his case nobly. He reminded his friend of their boyhood days—of the time when they had been almost inseparable, winter and summer, as they studied and played together. Said he, "James, do you remember that old flint-lock musket our fathers used to let us have to hunt with?" James nodded. "Do you remember how many times it brought down the game, and did wonders for such ancient artillery?"

His friend's face softened a little at the memory of bygone days, and he nodded again.

"Well, this old flint-lock musket failed us once or twice."

By this time James had relented enough to supply an incident or two in the narrative. "Yes," said he, "I do remember one critical moment when I stood face to face with a bear; and, although it had not failed me once for a very long time, the obstinate thing at just this critical point, when it was almost a matter of life or death, refused to go off."

□ "Well, James, did you throw the musket away and declare you would never have any thing more to do with it?"

□ "Why, no, I remembered how faithful it had been previously; and as there was not really any thing very much better to choose from away back in those days, I 'picked the flint' and tried it again."

"James, you have just said you would never forgive me for that one foolish act away back years ago. You surely do not mean to say that you are going to throw me over, and treat me

with less consideration than you would an old flint-lock musket, do you?"

James threw his arms around his old comrade's neck, and in his turn begged forgiveness for being so stubborn and obstinate, and they were friends ever afterward. Dear brother bee-keeper, does this story come home to you? Is there one in our ranks who has done some foolish thing? and have you been more foolish still in declaring in your heart, even if you have not said it in words, "No, I will never forgive him nor forget the injury"?



Praise ye the Lord; for it is good to sing praises unto our God.—PSALM 147:1.

One strong inducement to go to Toronto was an exceedingly kind letter from Grainger Brothers, florists and market-gardeners, out in the suburbs of Toronto. It rained the evening we came into the city; therefore next morning at daylight it was a splendid time to look over flowers, fruits, and vegetables. As soon as I could manage to get my rations of beefsteak at the hotel I was off on the beautiful new street-cars that go everywhere in Toronto. How customs do vary in different cities! In Toronto you do not put your fare in a stationary box, neither do you hand any money to a conductor. The conductors are all prepared to give you six tickets for 25 cts. Each ticket will take you anywhere in the city. Just say where you want to go, and the needful transfers will be cheerfully furnished. The conductor never takes your ticket, however. He simply presents you with a machine looking something like a coffee-pot, and you are expected to drop your ticket down into the glass nozzle. If you haven't any ticket, of course he sells you one or more. At the close of his day's work I suppose he hands over the unsold tickets and the money, and they should just tally. The coffee-pot is also handed in, and the tickets counted. When I looked inquiringly at said coffee-pot, the young man who carried it explained it very cheerfully. You see, they are accustomed to receiving visitors.

Friend Grainger was away, out in the gardens, among the wet grass and dahlias, and other flowers decked with dewdrops. His obliging and efficient assistant very courteously took me over to the place, and showed me the sights on the way. Grainger Brothers have several ranges of greenhouses that made me think I was in Pleasant Hill, Mo.; but they were not quite as extensive. Off through a pasture-lot we went, and climbed over the fence. Here was an apple-orchard with the trees bending with the most beautiful fruit, perhaps, I ever saw; and underneath the apple-trees, occupying almost every foot of ground, were great gorgeous dahlias—some of them as big as saucers (or a little smaller). This, you see, is gardening again under the shade of the trees, such as I described in Florida. On every hand I saw something that came from the Home of the Honey-bees. They put the Ignotum tomato at the head of all others, with the exception that it rots rather more than some others—the Atlantic Prize, for instance. These beautiful dahlias are shipped away down to the States, and among their customers are the seedsmen Dreer, Pitcher & Manda, and others familiar to greenhouse-men. But, didn't we talk tomatoes, sweet corn, spin-

ach, and every thing that grows in the garden! Just now, however, garden-stuff is very low in and around Toronto. Nice potatoes are retailing at 25 cts. a bushel; tomatoes about the same. Green corn has been hawked about the streets for 4 cts. per dozen; string beans, 10 cts. a peck; cucumber pickles, 15 cts. per 100. The recent rains, you see, have sent every thing forward all at once. Friend Grainger admitted it hardly paid for picking; but somehow it seemed easier for the men and horses to go through the motions than to stand still and give up. Besides, if they give their patrons great bargains just now when every thing is so plentiful, they will hold the trade, and may expect said patrons to turn around and give them a lift when prices are higher again.

The Graingers have a way of fixing their hot-water pipes that may not be new, but it was new to me. They use four-inch pipes with bell-shaped coupling, and the joints are made with Portland cement and water—nothing else. They told me, however, that, to get the best results, put the pipe together, put in your cement, set every thing as you want it, leaving a little opening on the upper side of each joint. After the cement sets hard, and you are ready to put in the water, then cement up these openings, or vent-holes, the very last thing. When put up in this way he says he has never had a leak. The hot water never disturbs the Portland-cement joints.

After we had looked around the home garden and admired the great masses of bloom, we took the horse and buggy and went further into the suburbs. Most of the soil round about Toronto is just the thing for market-gardening—a sandy loam—and a great deal of it quite rolling. The rolling land is just right for fruit. In one twenty-acre lot we saw apple-trees with the limbs just breaking down with the most beautiful, smooth, clean, handsome fruit. Between the trees was a rank, thrifty crop of sweet corn; and between the rows of sweet corn were great quantities of Hubbard squashes—three crops on the same ground. But I suppose the secret of it was the great quantities of manure drawn from the big city. This twenty-acre piece contained a great variety of crops of all kinds; but the owner had not yet learned the importance of having the stuff in long rows. He had square beds of one thing and then square beds of something else.

Oh! I must not forget to mention the beautiful Prizetaker onions. Some of them looked like little cabbage-heads. They were piled up in front of the groceries all over Toronto. Friend Grainger tells me they are transplanted onions, and are now produced all over Canada. He said he believed he started the thing first, and he got it from the Home of the Honey-bees.

Before getting around to the bee-keepers' convention I was treated to a glimpse of the trial grounds of Steele Brothers, of Toronto. There we saw all of the late and much-talked-of tomatoes, each one trained on a handsome wooden trellis, all in full bearing, the first of the tomatoes getting dead ripe, and not a tomato yet picked. As I told you, the Ignotum holds its own in Canada about as well as any other, only that it rots more in dry seasons than some others. Livingston's Buckeye State may, perhaps, be preferred by some; but the Fordhook Early, from Atlee Burpee, I think showed the best for an extra-early tomato. Oh what a beautiful place that was to test gardening! The only trouble—if it could be called a trouble—was, that the ground was so rich that almost every new vegetable showed to advantage. Why, their trial crop of cabbages was the finest cabbage-field I ever saw in my

life anywhere. I should hate to be obliged to load some single heads, leaves and all, into the market-garden wagon. But then, you see I am on beefsteak diet just now, and that may have a bearing on the case.

On our way home my companion asked me how much I remembered of him. I replied that we had corresponded more or less for many years about greenhouses and mushrooms, transplanting onions, etc. "But," said he, "I don't believe you know even now just who it is who is riding by your side. Do you remember that, years ago, a boy wrote you to the effect that he was working for a man who was a confirmed skeptic; and, notwithstanding what GLEANINGS said, it seemed to him, this boy, that Christians were not as honest and upright in deal as people who make *no* profession, or skeptics, if you choose."

I did recollect some such letter away back in the past. He went on:

"Just about the time my parents were lamenting that I was straying away from the faith, I got hold of a single number of GLEANINGS, and it gave me a glimpse of the real worth and value of *true* religion as a force or motive power in the business world I had never got hold of before. To be brief, I dropped my unbeliefing employer, and, through the influence of the Home Papers, I chose Jesus Christ, and commenced the Christian life. Along with my Christian sentiments I took to gardening and greenhouses. You have seen the outcome, or, at least, some of it. At first my wife did not take much interest in GLEANINGS, thinking it was gardening, bees, and such things, out of a woman's line. One evening, however, I picked out an old number and asked her to read a little of A. I. Root's talks. She asked for the next and the next, and I could hardly get her to go to bed that night; and in a very short time she had read the Home Papers up to date; and now you know why I was urgent in my invitation to have you make one of our little household. In the evening I was pretty tired and asked to go to bed early.

Oh! I almost forgot to tell you there is a baby in that household. Of all the beautiful flowers that the greenhouse and all outdoors combined can show, there is none brighter or prettier or sweeter than that baby; yes, and I might include as well another one that is a little too old to be called "the baby" just now.

After bidding them all good-night, baby included, I went up to my room. I wonder if any body else knows what dainty, pretty, tasty sleeping-rooms there are in "our neighbors'" homes all over our land. In fact, I should not know it, if I did not get around among my neighbors now and then. On the dainty little stand with its pretty spread I found the latest thing in the way of a handy Bible. Tired as I was, I selected one or two of my favorite passages. By the way, for weeks back every now and then there has been welling up from my heart the words,

Praise God, from whom all blessings flow; and as the sweet strains of music came up from the room below, I joined my prayer with their praise. Friend Grainger loves music as well as flowers, fruits, and vegetables. He is a leader, or something of that sort, of their Sunday-school choir. The young people of the neighborhood had gathered in with violins and violoncello; the sweet voices accompanied the piano in practicing for the next Sunday morning service, for this was the regular night. I laid my tired frame in the soft sweet bed, and, with the blinds thrown wide open, until the pure fresh air came right across my face, I lost consciousness with praises to God upon my lips.

The greenhouses and the flowers, and that little home, rejoiced my heart; but, oh! a thousand times more did I rejoice to see young boys and girls growing in wisdom's ways, and stepping heavenward—yes, the childish voices to be heard above the music, practicing hymns of praise, were to me the sweetest music ear ever heard.

After dinner, while standing on the hotel steps of the Palmer House, a man approached me and introduced himself as James Storer, of Lindsey, Ontario, a locomotive engineer. He said he had begged leave of absence for just a few hours in order that he might meet A. I. Root, and he came pretty near not finding him. It was not bees he wanted to talk about, although he had been a bee-keeper years before. Through the bees he got hold of GLEANINGS; and through GLEANINGS, nearly fifteen years ago, he was induced to give up the use of tobacco. Before he dropped it, however, one of his four boys had acquired the habit. That boy uses it still. The three other boys do not, and could not be hired to. Said friend Storer. "Mr. Root, if you were to give me \$500 in gold to-day, and furnish me, free of charge, the best tobacco that the world can produce, all the days of my life, I would not think of touching it; and I came here to thank you in behalf of my boys, in behalf of my wife, and in behalf of all my children—in behalf of Christ Jesus, our common Savior, for the good you did in winning me from that bad habit. Your Tobacco Column presented it in a way that I could not take offense. You reminded me of my boys, who would surely follow their father's example; and I said that, God helping me, I would not be a slave any longer. To-day I am a free man, and am rejoicing in better health; I am rejoicing in cleaner habits; I am rejoicing in a clear conscience. Keep up the Tobacco Column, and never let it drop, or be crowded out." Of course, the above are not his exact words, but I think they are not very far from them.



ALFALFA IN NEW YORK.

On the steamer on Lake Ontario I formed the acquaintance of E. A. Stratton, of Horseheads, N. Y. He told me he was a market-gardener. In May, a man to whom he had rented one acre went back on his contract, and the ground lay idle. He plowed it up and sowed half a bushel of alfalfa seed. By the middle of August it was two feet high, and he cut it and got a tremendous crop of feed. It was about a third in bloom when cut. The day he left home, Sept. 5, it had grown to a foot in height since cutting. Of course, this stand will winter safely—at least, I should suppose it would; and if this can be done in Chemung Co., N. Y., why can't it be done in other places? Friend S. said they were having a heavy yield of buckwheat honey. He had already secured 50 lbs. to the colony, of comb honey, and it was selling readily at 10 cts. per lb.

THE GAULT RASPBERRY.

Mr. Root:—In response to your request of Aug. 1, I will say that I have good prospects of getting 50 plants from the single Gault raspberry sent me this spring. There are now over 40 canes ready to layer, and they are still

growing more. It has not attempted to blossom so far this season. I am much pleased with the way it grows; and as soon as I test its fruiting here I will plant largely if satisfactory.

Unionville, Mo., Sept. 2. E. F. QUIGLEY.

The Gault raspberry has, from the one plant I got of you, given 30 nice plants, now growing. They are all the way from blossom-buds to ripe berries, loaded. I laid down the canes and covered three and four places with dirt like this: —o—o—o—o—and I raised good plants, by what you may call "layering." The consequence was, the layering plants threw out a shoot near, or about the surface of the ground, and these shoots gave what is called the early or first crop; then afterward they threw out good strong shoots from beneath the ground. By this time you can hardly tell which were the tip or layer plants. JOHN SLAUBAUGH.

Eglon, W. Va., Aug. 30.

ENEMIES OF THE CLOVER.

Mr. Root:—Perhaps I can give you the information desired by C. C. Welsh, of Fostoria, O., concerning the clover midge. The clover midge is a minute fly, or midge, which destroys the corolla of the red clover, *Trifolium pratense*. The larvae of the midge eating out the heads until they have a blasted look, destroying the organs of reproduction, and sometimes causing whole fields to be barren. The heads as they ripen sometimes appear as though they had been sheared, or the corolla plucked out. The above is enough to make any one entirely familiar with the work of the midge, which, when full grown, is not $\frac{1}{16}$ inch in length.

Now concerning the worm mentioned by Mr. Welsh. It is undoubtedly the *Phytomyzus punctatus*, an insect that attacks young clover-fields in this State in immense numbers, and, were it not for the fact that the insect itself is attacked by a fungus here, it would in a very short time exterminate the trifoliate family from our State, as, early in the spring, the sod seems packed with them. The symptoms of attack by the fungus will be known by seeing the worms suspended from grass-blades, where they soon die and dry up. This symptom should cause joy wherever seen, as it is a sign of no further damage.

Buckwheat honey is running at present. Baptists, N. J., Aug. 26. W. W. CASE.

BUCKWHEAT FOR PIGS.

Mr. Root:—Can you give me the results of feeding hogs on buckwheat? Is there any trouble in pasturing hogs on fields of it? I have an idea that we can raise pork cheaper on buckwheat than on any thing else, if it is healthful. The only fear I have is that it may give hogs a cough. I have some fine lots that I will turn my hogs into soon, if I learn nothing unfavorable. Last fall I had a small lot, and let my pigs go in it. The results were wonderful, although the animals coughed a good deal, but no further trouble. I hope to hear from you with any information you can give, so I will give the results of this season as soon as over. I counted 290 grains of buckwheat on one stalk, and still fresh blooms coming. Of course, it was a select stalk, but only an average of the best.

Goldston, N. C., Aug. 16. J. M. STINSON.

You have got us here rather out of our beat. I do not know that I ever before heard of buckwheat for pigs, but doubtless our readers can give you points in the matter. I can hardly believe that the buckwheat, as they ate it in the fields, had any thing to do with the cough. If

it should transpire that buckwheat is a cheap pork-producing plant, it would be another thing in its favor. Years ago I wrote about keeping poultry without any care or attention by sowing buckwheat for them, say every week during the season. It was because our hens did so well when we had a field of buckwheat close to the poultry-houses, and because some of the biddies went out into the field, stole nests, hatched great broods of chickens, and reared them, not only without any care and attention, but without any knowledge on the part of the owner, until the mother paraded a great brood, old enough to be past the danger-line. Another thing that pleases me is to know that buckwheat is a success as far south as North Carolina. I thought it was rather a cold-weather plant.

ABONDANCE PLUMS.

Mr. Root—Your mention of Abundance plums, page 607, will no doubt cause many of your readers to plant them, which is all right; but I wish to add a word of caution. Many of the Japanese plums bloom too early, and get frosted. Then many nurserymen bud them on peach-stocks, which is a mistake that the planter will have to bear. All plums should be budded on plum-stocks. The following are the best of the Japan plums: Abundance, Burbank, Red June, Chabot, Orient, and possibly a few more. They are a beautiful tree, and fruit brings a good price in the market. In planting for market I chose Abundance and Burbank, and will add Red June and Orient at my next planting. I will favor the readers of *GLEANINGS* with my success with these plums in North Missouri as soon as they commence bearing. Being interested in horticulture, I should like to know how your Rocky Mountain cherries have fruited.

FREEMAN POTATOES.

I planted a barrel of Freeman potatoes, and am well pleased with both the yield and quality, though they are not quite so early as expected. I followed the Terry plan of planting and cultivating.

E. F. QUIGLEY.

Unionville, Mo., Aug. 6.

The trouble here, friend Q., with the Abundance plum, is as you mention—they are very apt to be cut off by late frosts. A neighbor of ours has an orchard of toward 100 trees, and last spring they were loaded with green plums; but the frost took every one of them. The frost also took every one of our Rocky Mountain cherries; but our experiment station secured some fruit, and they tell me they are more like an enlarged wild cherry or choke-cherry than the tame cherries that grow on our trees. I fear that the nurserymen have overstated in regard to the quality of the fruit.

HUMBUGS AND SWINDLES.

A subscriber sends us a part of a periodical that calls itself the *United States Health Reports*. On this clipping there is a big boom of the California cold process of preserving cold fruits, signed by Mrs. M. A. Curter, Englewood, Ill. She tells how a poor woman can make one or two hundred dollars around home in a few days by selling the secret for a dollar. Anybody who wants to sell you a secret or a recipe for doing any thing for a dollar or any other sum, had better be turned out of doors to start with; do not parley or argue. Get him clear off your premises as soon as possible, for all such things are humbugs and swindles. This poor woman says she will send samples of the fruit,

with full directions, for 18 two-cent stamps. I do not know whether she sends anything for the stamps when she gets them, or not; but the thing is an old humbug and an old swindle. On the other side of the paper we read:

“Indorsement of the United States Health Reports, July 19, 1895.”

Then they go on to tell that the United States has indorsed the Perfection Manufacturing Co.’s dish-washer. The washer may be a very good thing—we don’t know; but the puff of the thing is an out-and-out swindle. It is a little significant, but not at all strange, that, on the same little clipping, we find a denunciation of preachers in general. One would think this United States Health Report had a special dislike or dread of the very word “preacher,” and well they may have. We have looked in our commercial reports for the standing of the Perfection Manufacturing Co., Englewood, Ill., but the quotation is blank, blank. Look out for all such advertisements.

Books for Bee-Keepers and others.

Any of these books on which postage is not given will be forwarded by mail, postpaid, on receipt of price.

In buying books, as every thing else, we are liable to disappointment if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as well as the buyer, it is hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults, so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I especially approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

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